Plows, Profits and Civilization

PLUCKY old Governor Murray of Oklahoma, who has been thwacking the overproduction of oil in his State dramatically and effectively, came to Chicago on Labor Day and in his address at Soldier's Field got this choice bit of economics off his chest:

> "Civilization begins and ends with the plow. When the plow turns at the end of the furrow **With A Profit,** that works for civilization."

We like that paragraph—it links civilization up with plows and profits which is proper. It is a homely simile, but an effective one, and with it, he got a great truth over to his sympathetic hearers, for they all knew that if there is one thing which civilization needs right now more than anything else, it is to plow some substantial profits back into industry.

What the courageous fighter really said was this: civilization begins and ends with industry. When industry turns at the end of the year with a profit, that makes for civilization.

The "plow" is the symbol he used for "industry." It was a brave symbol to use and it proclaims the man for what he is, the apostle and champion of a civilization that is based upon industry that returns a profit on its operations.

For profit is the essential of industry, without which civilization must decline. It is the profit which is made on industrial operations which makes for peace and underwrites the security of possession.

Governor Murray knows that, as he does the Constitution of his State and his Country.

Every working man knows it, as he knows his name.

Every inhabitant of these United States, who possess the brains that God gives to little grey goslings, knows that industry at the present time is down on his back taking the count, because it cannot make profits on its operations and that situation does not make for civilization.

What's the matter?

What hinders industry from making its just profit and throws the whole country into an uncivilized condition?

Overproduction!

Overproduction which is unjust, uneconomic, uncontrolled production. China is an outstanding example of uncontrolled production.

Overproduction is the mistake of fools, or the result of ignorance, or the wilful outcome of promoting knaves, or the over-reaching ambition of get-rich-quick-Wallingfords.

In addition to the above quadrilateral of uncivilized overproduction, we suffer also from one more factor—the lack of rationalization of industry.

Oh, yes, we know that the line of demarkation between a fool and an ignoramus is slight and between a knave and Wallingford is equally scanty but they are like our poor covetous relations—they are always with us and we shall always have

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to look after them. They can be handled like all minor perpetual problems.

However, the rationalization of industry is a job of major proportions. It calls for the equipment of our industries with the best outstanding personnel leadership in each of its divisions. It demands brave, honorable, honest, intelligent decisive men, of uncommon common sense—men whose background in their respective divisions of industry is born of experience, who possess the wisdom which comes with maturity—men who know the righteous history of trade customs and ethics of civilized production and merchandising and have the courage, grit and guts to stand up and battle for the best.

In a word, rationalization of industry means good management, and good management is the hall mark of good men.

Good management never envisages overproduction.

Good management knows and never transgresses the basic principle of all barter and exchange—namely, the law of demand and supply.

Good management works on the basis of profit on volume always.

Good management knows that good competition is the life of trade and crooked competition is the death of trade.

Good management seeks to live and let live. It builds business—never destroys it.

Rationalization of industry, therefore, is the summum bonum of business. It will come and is as certain of ready realization as is Edison's place in the Hall of Fame—both are contributors to industry, progress and profit, and make for better civilization.

Governor Murray has met the monster, overproduction in oil in his territory, tamed and controlled it in the interest of better civilization. In a dramatic but effective fashion, he has shown the men in control of the oil industry that the panacea for overproduction is to shut down the producing units and bring production in balance with demand. He had to do it with troops and by force because the industry was in the hands of a helpless, hopeless, impotent management. His forced action in the closing down of the wells constituted a drastic indictment against big business which is honeycombed with bad management.

"When the plow turns at the end of the furrow with a profit, that makes for civilization."

Alaskan Pulpwood Controversy

AS a result of the plea made by the American Paper and Pulp Association to President Hoover for a suspension of sales of Alaskan pulpwood, the story of which was told in the August issue of THE PAPER INDUSTRY at page 631, there has been some correspondence between the general manager of the American Paper and Pulp Association, officials of the United States Forest Service and Arthur M. Hyde, secretary of the Department of Agriculture, of which the Forest Service is a part.

At the outset it may be stated that the Forest Service does not view with approval the proposal made by the American Paper and Pulp Association that Alaskan forest reserves remain undeveloped and be withheld from use in the production of pulp and paper in the United States. E. A. Sherman, acting forester has so stated in a communication to the American Paper and Pulp Association dated July 30, 1931, the point being made that "the development of industries using domestic wood for the manufacture of paper in the United States for domestic consumption would tend to relieve unemployment conditions among our citizens, both woodsmen and mill workers." This expression of opinion drew a response from Jesse H. Neal, general manager and treasurer of the association, who declares that "the Alaskan developments have stood as a threat to the whole paper industry for over a decade. Up to 1926, while the industry was expanding, the threat was not particularly dangerous to the prosperity of the industry. Now, however, since the industry has become so largely over-expanded, the threat of 500 tons daily production is a serious matter." He points out that no new production is needed to satisfy the demands of American publishers, as there is machine capacity available to manufacture 40 per cent more than their present needs. He feels that new production would aggravate an existing bad situation and instead of relieving unemployment conditions would, by eliminating mills in other parts of the country by displacing their production, cause unemployment and wastage of capital resources. According to Mr. Neal, the best interests of both producers and consumers of newsprint paper are served by the production of this commodity as near to the point

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200 FIFTH AVENUE, NEW YORK, N.Y.

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of consumption as possible, "regardless of whether they are domestic forests or those of Canada, Newfoundland or some other country. In other words, the American newsprint supply is drawn from the cheapest sources possible under conditions that approached normal competition before consumption decreased and production facilities were so greatly enlarged."

The real remedy for the unprofitable conditions that surround domestic manufacture of newsprint paper is, in Mr. Neal's opinion, the imposition of a tariff on imports of newsprint paper, which are now greatly in excess of domestic production. Mr. Neal says: "To change present conditions obviously involves measures that will give to domestic production an advantage in the competition. The most effective way of bringing this about is by a tariff that would protect a higher price in the domestic market and which consequently would encourage the expansion of production. With the interests of the newspaper publishers directed against a tariff, it is difficult to see how one could be established. Under these circumstances, the market must remain open to the trade of all producing countries, whether domestic production can meet the competition or not."

In his letter to Acting Forester Sherman, Mr. Neal does not hesitate to characterize a refusal of the Forest Service to postpone sales of Alaskan timber for newsprint as something that would have the effect of "a deliberate attempt to advance the interests of one part of the country at the expense of present producing regions, both West and East, and to the ultimate injury of consumers." To open up the Alaskan Forest reserves for increased manufacture of paper would be a waste of natural resources on a par with the Government throwing open all public lands for the drilling of new oil wells. There would be no doubt that such leases would be eagerly snapped up, but this would be no proof of the wisdom of the act. Mr. Neal goes on to say that—

"The vast pulpwood resources of the Northwestern states have barely been touched, and the existing mill facilities are more than adequate. It would be a serious blow to the sound and orderly development of this important paper producing region, to inject into the situation 150,000 tons of additional newsprint production annually, and the effect of the disturbance would extend across the country."

Secretary Hyde, to whom was referred Mr. Neal's letter to Mr. Sherman, sent a copy of a memorandum prepared by the Forest Service in which the development of Alaska's forest industries is discussed at some length. Secretary Hyde informs Mr. Neal that an arbitrary restriction of this development would not be justified and he consequently does not feel warranted in taking such action.

In reply to this letter of Mr. Hyde and the memorandum, Mr. Neal traverses the grounds of both and reiterates the contention of the American Paper and Pulp Association that the proposed Alaskan developments would be of no economic benefit to the people of the Territory but constitute serious danger to existing newsprint producing communities throughout the country, and the first communities to suffer would be those within the logical marketing territory for Alaskan newsprint, the Pacific Coast region. He quotes George W. Houk, of Hawley Pulp and Paper Co., Oregon City, as to what would likely happen in this region. "Alaskan paper mills (Mr. Houk says) will be the first cause for closing newsprint mills in Washington and Oregon, as this will be Alaska's logical market, and more important pay-rolls in Washington and Oregon will be jeopardized."

The plea of the American Paper and Pulp Association for a definite postponement of any effort to encourage the manufacture of Alaskan pulpwood into newsprint is accordingly reiterated. In his letter to Secretary Hyde, Mr. Neal says that the offer of sale at this time would be as unwise as to attempt to bring about a larger wheat and cotton acreage, or to promote the drilling of more oil wells.

It is not honest for us to go on and sell our goods below the cost of production and deprive our stockholders and our workmen of what they are entitled to. Taking into account our capacity, the country's capacity and the country's production, we ought to be making a good profit. By what manner of means do people get into their heads that if production goes down they must sell cheap? We ought to get fair prices and we have got to make up our minds that the principal factor in the situation is resistance to unfair buyers.—*James A. Farrel, Pres. U. S. Steel Corp.*

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Management—and a New Era

By R. M. CARLSON
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New York, Chicago and Toronto

TODAY is the end of an era. Tomorrow will find us in a new age, brought into being by economic forces which even our keenest minds seem unable to measure or define.

Off on the northeast horizon is the cloud of Russia. Filled with a nationalism that rises to a religious ecstacy, a giant nation is confronting a hostile world with a new philosophy of production and consumption. She has but one objective in mind; to preserve the nation, even if it is necessary to wreck the rest of the civilized world to do so.

Whatever personal opinions we may hold of the Russian experiment, we can not ignore the very real threat she offers to the commerce and trade of the world. Here is a nation denying to all of her people the right to profit from production and distribution. Steel at cost, labor paid a wage only large enough to cover the barest animal needs, power at low rates, and management which receives no greater reward than does common labor; all combine to make possible prices below those of nations which depend on private enterprise for the conduct of business.

(The recent announcement of changes in Russia's wage policy has been read as a negation of the communistic principle. On the contrary, it is only evidence that her leaders are trying harder than ever to make communism a practical, workable system; one which can compete with other systems of government that do permit private profit. Russia is merely recognizing the basic principle which underlies every sound wage incentive method that was ever installed in any industrial plant; namely, rewards should be commensurate with results accomplished).

To-day, Russian goods are making themselves felt in some world markets, and will probably be even more in evidence in the future.

And is it not reasonable to assume that a nation which regards the education of the masses as a religious duty will soon sense that the production of paper within her borders is highly desirable? It will not be surprising if within the next few years Russia is a factor in the world's paper markets.

Nor does that part of Europe which lies outside Russia offer a more optimistic view. Germany staggers under a load of debt pressed on her by the Allied nations. The present moratorium is only a breathing space; soon she must lift the load again. England's dole is only one manifestation of unemployment that is world wide.

India, seemingly remote, may be the "trigger state" of important world problems. Japan, waxing stronger industrially each year, is steadily building competition for American trade.

At home these world conditions are reflected in a depression which has made a deep imprint on the economic structure of our country. And with the

This is the second article of a series being presented by the staff of The Sherman Corporation, dealing with merchandising, management and manufacturing improvement.

The Sherman Corporation acts as industrial advisor to THE PAPER INDUSTRY, and under its arrangement with this publication, executives in this industry and its allied industries are privileged to make inquiry regarding any industrial problem or plan which they may be pursuing or contemplating. The Sherman Corporation will treat such communications in the strictest of confidence. They will analyze the problem or plan and will submit the result of their analysis based on the best of their experience.

passing of this present crisis, we will be face to face with a new era in American business.

What will be the nature of this era, and what will distinguish it from the eras of the past?

The Era of Management

From the beginning of the industrial revolution, down to about 1920-1921, we were in an era of manufacturing, when any worthwhile product, once produced, could easily be sold. Over-production, while an occasional problem, was soon absorbed when retail stocks ran low.

For the past ten years, we have been living in an age when merchandising has dominated the business picture. The sales manager has been king. Any manufacturer who has been equipped to produce a product has had no difficulty in producing it, once orders have been on hand.

But world conditions in 1931 have brought us face to face with a new order of things. Neither manufacturing nor merchandising dominate the industrial and business situation.

To-day is the beginning of the Era of Management.

On the chance that this statement may be misunderstood, it might be well to emphasize that this does not mean that the paper manufacturer will not continue his efforts to cut manufacturing costs and to make every effort to sell his product at the least possible expense. It does mean, however, that more important than these will be the executive intelligence directing the course of business operation.

Management will find it necessary to constantly analyze the factors which contribute to profitable operation, and then adjust the business to new policies and methods made necessary by the new order of things.

The organization with which I am associated is frequently called in to study the situations of companies which want to bring their management procedures in line with present-day needs.

Perhaps a brief summary of such a case will show how an honest appraisal of a company's position can overcome problems which are attributed to "conditions." Only this morning I have been going over the data prepared for one of our clients on such a situation. This company happens to be in the furniture industry, which, as you may know, has been on the down grade for the past six years. A survey of the industry which we made recently showed that since 1925, profits have fallen off at least ten per cent each year. There are about 60 per cent more plants in the industry than are needed to produce all the furniture that can be possibly consumed.

You can appreciate that when a well-known manufacturer in the industry came to us for help, with the explanation that he had done everything in his power to bring about improvement, but without success, we were somewhat skeptical that anything further could be done.

A study of his picture, however, showed that while he had been working hard, and as well as he could, he was not getting at the root of his trouble.

First of all, he was assuming as a matter of course that his product was right. As furniture, it would be difficult to say his product was anything but right. His workers were craftsmen who loved their work. His styles were perfect example of their period. His materials were selected with meticulous care.

But as saleable merchandise, his product was definitely open to criticism because he was not producing what the consuming public would buy. Conditions in business as a whole had cut down the income of the people with the taste and desire for furniture such as he could make.

No amount of sales effort could change this basic business condition. What he had to do was to bring his line into agreement with the market. Without sacrificing the quality for which he had been known for years, we set up ways and means of fitting his product into a price groove which no other manufacturer was serving, in which there was a real demand.

As a result at the June market he sold more furniture, both in dollar volume and in number of pieces, than he had sold for several years.

It is this technic which the paper manufacturer must apply to his business. Take nothing for granted. Don't look at your business from a historical standpoint; ancient history can not predict what will happen tomorrow. Dig deep; and know your facts are right.

Just how much business can be had in products you are equipped to make? How much of that market can you reasonably expect to sell? What supplementary markets are there which you might serve?

In eight out of ten situations, analysis will probably show that the potential sales of the business can not hope to earn a satisfactory profit on invested capital.

No matter how loudly paper manufacturers may wail and cry about this condition, the fact will remain. The paper industry to-day is suffering from an injudicious investment of capital, and only the permanent elimination of many companies will remedy the situation.

Even when companies fail financially, it has been found that they are bought up at low prices, and due to low capitalization, are stronger competitors than they were before they failed.

Stabilization—Then Profit

Without entering into a lengthy discussion of the economics of price trends, it might be well to point out that the constant downward trend of prices in any industry is in direct relation to the amount of capital poured into the industry in excess of normal requirements. That is the position of the paper industry to-day.

This means that manufacturers must bring their

investments into relation with to-day's markets and a normal expectancy of sales. Prices must be set with competition in mind, at the same time protecting capital against the effects of the unwise investments in plant and equipment made by other manufacturers in the industry.

That may sound like an endorsement of price cutting. On the contrary, it is advocating price stabilization. For the present condition in the industry is the result of uncertainty. If every company would revalue its assets in terms of present-day conditions, stability would be brought about, and soon profitable operation would be the rule rather than the exception.

In other words, be satisfied to make less profit if your field is oversold. But make a profit. If business is overcapitalized to such an extent that it can not earn a profit under even exceptional conditions, management is not doing its job.

The Alertness That Succeeds

Nineteen Thirty One management will demand more from executives than did that of 1927-1928. Each year sees a quickening of the business tempo. In some lines of business, as little as two days' time lost in receiving goods may mean the difference between loss and profit.

I know of two paper manufacturers, each trying to produce a certain specialty. One brought out the product as soon as perfected, in a limited range of colors at 12 cents a pound. The other felt that his product should be sold at about ten cents a pound and that the color range should be very carefully selected. Months later, after long deliberation and much talk, he was ready to present his new line to the trade.

But the first manufacturer had tied up the market, and the second was compelled to drop the idea for lack of sales. The first manufacturer was exercising management judgment by not wasting time mulling over the idea; he put it across without indecision and delay.

About 50 per cent of the executives in American business seem unable to reach a decision. I have seen four major executives of a large company mull over the purchase of a $500 piece of equipment, only to refer the matter to the board of directors for action. In one instance that I can call to mind, the actual dollar value of the executive overhead involved in making the decision was in excess of the value of the equipment.

The reason for much of this indecision is the lack of accurate, useable information on the business and its operation. Real executive control based on facts is a rare thing.

By information, I do not mean elaborate statistical data on every phase of the business. I mean the commonsense, practical facts that every business man should have on both his manufacturing operations and his sales field.

For instance, I have on my desk the report of a study we recently made for an internationally known paper company, which in its particular field is looked on as a leader. Yet within the several mills of this company, over $200,000 a year was being wasted in the following ways:

1—Limited capacity of certain manufacturing operations slowed up the entire output far beyond the actual delay incidental to the operation itself, adding greatly to the expense of operation.

2—Use of boilers that were obsolete. In the poorer plants, power cost per hundred pounds was double that of the better plants. Ineffective use of steam power to supplement water power.

3—Paying labor more than it was worth in terms of production.

4—Using equipment which improved methods had rendered obsolete.

To explain just how this money was being wasted would take several pages, but it is enough to say that management, when shown how their profits could be protected by salvaging this waste, took immediate steps to put this information to work. None of the things we showed them were mysterious, esoteric rabbits pulled out of a magician's hat. They were facts, just such facts as every business man should, and can have on his business.

From a production standpoint, most companies have fair information, although there is room for improvement in nine out of ten firms. On sales, however, the story is not so pleasant. When information is available, too often it consists of reports put out by some professional statistical bureau whose primary purpose is the furnishing of stock market data. Not only is it too old to be of practical value in planning to-day's sales strategy, but it is too far removed from the paper industry's special problems to be usable.

A highly valuable step for any manufacturer would be to set up ways and means of securing facts pertaining to his own business. There are many sources of such information. For instance, it would surprise you to learn how much highly valuable facts your salesmen and jobbers could contribute under a properly organized plan of operation.

After the information has been brought together, analyzed and interpreted, you will be in a position to operate on a basis of facts, which should be directly reflected in profit.

Facts will be the most important tools in the new era of management.

Corrected Mistakes Bring Progress

One of the most pathetic things about business leadership to-day is that the average executive is not willing to admit he was wrong. Time after time, he will defend a wrong decision, in many instances even at the expense of the welfare of the business. To err these days is no reflection on a man's ability. As

Alfred Sloan of General Motors once said, no man can live long enough to make all the possible mistakes for himself. To learn by experience is no longer possible. Business progress to-day is made by not only learning from one's own errors, but by building on the mistakes of others.

It is impossible, however, to progress in this way unless first of all one is willing to admit that mistakes are part and parcel of business operation.

Resolve right now to admit some mistake which has perhaps adversely affected the profit position of your company. But more than that, take steps to correct that mistake.

Define executive functions in your business with greatest care. Even if there is no obvious "buck-passing" in your business, the fact that certain duties are not definitely assigned to some executive for control means that they will receive little or no attention. Don't leave this definition of duties to chance. Have each executive list his duties, indicating what he is planning for improvement, and you will be surprised to find that many things, which you had considered were being taken care of as a matter of routine, have not even been considered.

Here is a prescription I would recommend for every head of a paper company: Forget you ever saw a sheet of paper made. Imagine you are looking at an entirely new substance, about which you know nothing. How would you go about evaluating it? Look at your plant, equipment, markets and personnel as though you had never seen them before.

As impossible as that task may seem, you will be surprised at what you will really see if you will only try. On the basis of such observation, build your business to meet the new era, the Era of Management.

The Manufacture of Coated Papers

Factors to be Considered in Ordering Raw Stock

By NORMAN CLARK

I HAVE in mind one of those regular "he-man" papermakers from whom, I, as one of those "dub" coaters, buy most of my raw stock. However, despite the handicap of our professional restrictions, we get along remarkably well. You see, I know enough about papermaking to keep him straight in his explanations and he has come to realize that there are some troubles and problems, incident to the coating game, worthy of serious consideration. This condition of relationship has built up a mutual respect that makes possible the discussion of raw stock problems on a rock-bottom analytic basis. This situation is a result of taking a tip from the football mentors and going into a "huddle". Sometimes we meet in the mill, often in our backyards, but wherever it is, we strip the problem of all personalities and discuss the essential factors involved.

Mr. Papermaker and Mr. Coater, the preceding paragraph is written in order to pass on to you a procedure that is working. Get together and co-operate on the solution of coating raw stock problems. Disagreements will become fewer and the number of kicks less and, what is more important, raw stock will be better.

Following are some of the items Harry and I have chewed over in considering this important subject of coating raw stock. This question may conveniently be divided into two parts:

(A) Those factors defined by definite physical specifications.

(B) Those factors which cannot be defined by definite physical specifications.

Factors Defined by Definite Physical Specifications

At the outset let it be understood I am not going to attempt to offer specifications for the ideal coating sheet. We all differ as to what that ideal sheet is, and so it would rob the coating mills of the individuality. Besides each superintendent has his own ideas as to the makeup of the sheet for his particular purpose. That is what makes it so essential for each coater to get together with his papermaker and thrash out their own list of specifications.

The coater has two methods of procedure from which to choose: (1) allow the papermaker full leeway in the making of the sheet or, (2) specify definitely the properties of the sheet. The latter is by far the better method, for it removes the basis of much "buck-passing" and places the coater in a position of intelligently knowing more about his whole problem. It also takes the burden of responsibility from the shoulders of the papermaker and allows him to concentrate his energies on the making of the sheet.

There is more to this matter of writing specifications, Mr. Coater, than just sitting down with a pencil and paper and dashing off something that you think may fill the bill. First, the coater must know what he wants. If not sure then get together with the papermaker and determine what the specifications should be to meet the requirements. Second, he must be able to tell whether or not the delivery is up to the specifications set. If they are, run the paper and watch very closely to see that these specifications produce the sheet needed. If they are not as

ordered, don't go back at the papermaker like the broadside of an old line battleship. If you do, you'll probably get the same kind of a volley in reply and the scrap will be on. No, take the matter up in a straightforward definite way and the likely result will be the trouble located and the next delivery O. K.

With this thought in mind, let us briefly consider the various specifications which may be termed "Definite".

I—Size of Roll (Width and Diameter). The width is a figure which is definitely determined by the size of sheet to be made. From a ¼-inch to ⅜-inch should be sufficient trim. If color edges bother the coater, a doctor of some kind should be used. The type will have to be adapted to the machine. Rolls of as large a diameter as feasible to run should be used; whatever the requirements are, they should be definitely specified.

II—Weight. Although this factor is a definite quantity, perhaps the most important aspect is that it be uniform. Nonuniformity of weight, beside being one cause of variance in weight and bulk of the coated sheet, is a factor in the irregularity of color. This is assuming that the thickness of the sheet varies as the weight. Brushmarks may also be a result of inequalities in weight. In writing this specification the coater should remember that the papermaker must be given an allowance, plus and minus, on a given standard.

Another factor of weight is the amount of paper ordered and delivered. If an excess is delivered, then the coater soon has an accumulation of odd rolls. If too little, then the papermaker has to make an undesirable small run to make up the deficit. The remedy is this: establish maximum and minimum figures as a specification. Base these amounts on the average figures for seconds in the coating mill.

III—Thickness. This is a factor which ought to be definitely specified by the coater. He knows, or should know, the use for which his paper is intended and consequently the importance of this matter of thickness. This is emphasized particularly in the printing, lithographic and fancy box trades. A variance in thickness causes unequal register in printing or depth in embossing.

IV—Furnish. Does the average coater know the effect of a change of furnish in his coating sheet? Does he know that not only changing the percentages of the constituents, as of sulphite, soda, rag or groundwood have an effect, but that change of grade, of sulphite for instance, may also have a beneficial or disastrous effect on the sheet? And to change the direction of the question, does the papermaker know what effect these same changes may have on the sheet as regards its coating qualities? Right here is an excellent opportunity to go into a huddle and lick this problem right. Probably the ideas of Mr. Papermaker and Mr. Coater will be decidedly at variance. Even so, after one or two trials, at which the effect of changes in furnish is carefully noted, your ideas as to the makeup of the right sheet will be considerably more in agreement.

These days, Mr. Papermaker has to count his pennies twice and so perhaps he'll have to ask a higher price for the paper. The shoe pinches here, for Mr. Coater can't get it back by asking an increase in price of finished sheet. This change in furnish, it is agreed, will make a better coating sheet. Then we've got to have it some way. Suppose Mr. Coater looks at it this way. The change may enable you to cut down your matching time and reduce machine waste because the color lies on the sheet better than it did before, perhaps you can run your line a little faster or cut down on the heat, because the more even a sheet is coated the easier it dries, or you cut down on seconds, or reel and calender waste. It is a debatable question whether the change would bring about these results but at least it is worth a trial.

V—Sizing. It is rather impractical to say much about this factor in a general way. If it cannot be specified numerically, at least reference may be made to a run that is right. The demands on coated paper are so varied that quantity of size must be regulated to meet the requirements of individual cases. In general the softer the sheet, the better the color will lie, within limits; the use for which the finished sheet is intended must always be taken into consideration. Besides engine sizing, there is the oft debated question of tub sizing. Here it is largely a question of the amount of color to be put on the sheet and the necessary amount of brushing. If a large amount of color is to be put on a hard sheet and in consequence both hard and considerable brushing is required, then it is advisable to specify a light coat of starch size (about ½ of one degree) in order to lay the fuzz which might otherwise be raised. Under ordinary conditions I should say do not use it.

VI—Strength. Under this head is included Mullen or bursting strength, tensile strength, tearing resistance and folding endurance. It is very seldom that all these factors have to be taken into consideration on a single sheet but those that are of importance must be carefully specified. In this connection it is well to remember that the finished sheet should be tested at various periods of time after going through the mill. This procedure should be adhered to until the effect of time has been definitely established on particular coatings. This proviso is advised because it has been found that samples taken from dealer's stocks often do not test as they did at the mill shortly after manufacture.

VII—Color. In the mind of the coater this factor may not seem of as grave importance in the matter of raw stock as it does in the finished sheet. This truth must be borne in mind, that the nearer the color of the raw stock is to the coated sheet, the better the job made. Although this factor should be one

that is definitely measured, yet, usually it is not. There have been many systems of color measurement and notation proposed but either the equipment used is too expensive, the method too complicated, or the results too unwieldly or entirely beyond the scope of the practical man to handle. Confronted with the results of measurement, using one of these systems, the natural question is "what do I do with them?" One of the weaknesses is the translation of such results in terms of the coloring matters being used. I recall hearing the exponent of one of these systems dilate on the wonderful achievements of his machine. He said, "this machine will match color closer than the human eye." What did that mean? Either he was leaning over backward or waxing unduly enthusiastic, for if a match by the human eye is not a match by the machine, conversely, a match by the machine is not a match to the eye. And we still make and sell paper largely by the eye. Perhaps he was looking ahead to his Utopia when every buyer and seller of paper would possess one of his machines.

This matter of color matching and notation is of extreme importance to all concerned. Not only should we have a system that will allow the required color to be matched and noted, but that will also allow statement of agreed allowable variation in delivery. This matter of deciding whether or not a color is near enough to "get by" is all bunk. It is a glaring opportunity for those of an inventive mind. Until the time arrives when we have a workable system, specification should be made by sample. Allowable variation should also be stated by sample and not couched in generalities. Here the closest co-operation is not only desirable but necessary.

VIII—Bulk. The factor of bulk is a ratio usually expressed by the thickness of a ream in mils, divided by the substance. The coater should get across to the papermaker that the better the bulk, the better coating he can do. There are two important facts for the coater to remember. First, the color lies better on a sheet of good bulking qualities, and second, a good bulking sheet dries more quickly and more evenly. Although it undoubtedly increases the cost, a fairly high percentage of soda pulp, coincident with the other qualities of the sheet, is very desirable to bring up this bulk factor.

IX—Finish. Here is a factor which it is possible to measure in definite terms, but which is seldom specified definitely. The coater does not want a high finish and above all else he wants a sheet uniform throughout the shipment and from order to order. In most cases it is still left to the individual judgment of an operator as to whether or not a sheet equals the last delivery. Machine measurements should be made so as to allow definite specifications to be written.

X—Dirt. Dirt count is usually made on the finer grades of paper but often neglected on coating raw stock. It is particularly important on sheets on which a highly finished white is to be laid. Once paper goes through the coating process, the coater usually has to stand the blame, for in his process there are many possibilities of occluding dirt particles. Since there is often considerable doubt as to their origin, a definite dirt count is advised.

Factors Which Cannot be Defined by Definite Specifications

We now come to a group of qualities about which it is difficult to specify except for the coater to say he does or does not want them. In dealing with these factors, it is essential that the coater be familiar not only with the papermaking processes, but with paper itself. It will be found that a hearty co-operation between papermaker and coater will here be productive of great benefit to both.

I—Formation. For a good coating sheet there should be little formation shown. A sheet approaching wildness does not absorb color evenly, and later on is a cause of unequal absorption of ink in the printer's processes. But character of beating and fiber play such an important role, that the papermaker should specify, on agreement by samples, just what he is able to do under his operating conditions. Other things being equal, the less evidence of formation in the sheet, the better the color lies.

II—Fuzz. Just how important this factor is to the coater depends on three conditions: (a) amount of color to be put on; (b) amount of brushing necessary; (c) hardness of the sheet. Fuzz may not be apparent on the surface of the raw stock, but, if excessive brushing is necessary, it may show up in a mottled appearance of the coat. In the center of each mottle will be found a curled fiber end. If a dyestuff is used in the coating color, this fiber will be dyed a darker tint than the color of the sheet. In such a case, as stated before, a light treatment of tub size ought to be applied.

III—Feel. To determine this factor, there is necessary that indescribable sixth sense of the man familiar with paper. Such a man can determine by its feel whether or not a sheet is suitable for the purpose intended. It is a faculty, which is assumed, the papermaker possesses and which the coater must acquire if he would know his raw stock. Language fails when we come to give expression to it. All that can be said probably is that the sheet should be leathery or velvety and not harsh or brittle in feel.

IV—Curl. Here is a factor which probably causes more lapses into a state of profanity, than any other with which the coater deals. Allow me to cite an actual case. The sheet is a coating bond. The machine rolls are split in two. Apparently the sheet is perfect, but when run over the coating machine, the front of the front roll and the back of the back roll curl badly. The other edge, in each case, runs perfectly. The coater and papermaker got together and decided it was a case of uneven drying between the edges

and center of the paper machine. Efforts were made to slow up the drying of the edges with marked success. Here again, the amount of color put in the sheet makes a difference. It is a peculiar fact that this curling effect may vary according to the side coated, whether felt or wire.

V—Edges. To do a good job the coater should have perfect rolls edge to edge. Uneven tension, from whatever cause, will produce color valleys running from the slack edge toward the center of the sheet. Uneven thickness between edges will cause a variation in color. This is a source of much waste time in sorting, and a high proportion of seconds. There is still another edge trouble. One edge will have a mealy appearance, even in the raw, which is accountable for a smallpox effect when the sheet is coated. This effect may occur in straight streaks or in clouds. A peculiar property of this trouble is that it appears only on one side of the sheet, usually the wire side. If the coating side is reversed, the trouble disappears. The effect has been found only on hard sheets —bonds, for example.

VI—Welts. Just what causes welts is a disputed question. About some facts concerning welts there is agreement; the lighter the sheet the more liable are welts to occur. They usually develop sometime after the roll is made and to varying depths into the roll, up to about two inches. If the welts are torn off and the roll allowed to stand, they will often return. In the same shipment some rolls will have them and some will not. Although little can be said about causes, it seems to be true that they have become a more prevalent source of trouble since the introduction of drum winders. Rolls are wound tightly to prevent wrinkles and if a variation in size takes place, a welt results. Then, too, moisture content seems of importance and to be brief a moisture content of five per cent seems to be the percentage at which welts are least likely to occur.

To the coater welts mean the formation of color valleys which mean "seconds." It is seldom that welts can be pulled out with tension, for they generally run round the roll. Mr. Coater, you don't want welts, so get together with Mr. Papermaker and fight this trouble jointly.

In conclusion I have tried to emphasize three points: (1) to show the advantages of close co-operation between coater and papermaker; (2) to show the need of definite specifications in the ordering of coating raw stock; (3) to point out the factors involved in the consideration of raw stock for coating.

Perhaps the greatest human happiness flows from personal achievement. Our progress is almost solely dependent upon the creative minds of those individuals with imaginative and administrative intelligence who create or who carry discoveries to widespread application.—Herbert Hoover.

Lubrication of Beater Bearings

THE proper lubrication of bearings of the beating engines is a subject of continual interest and argument in paper mills.

The following paper printed in the Texas Company's **Lubrication** magazine is timely and we are glad to present it herewith.

"The Problem of Bearing Lubrication—The actual weight of the beater roll is the basis of the prevailing lubrication problem involved in beater operation by virtue of the pressures developed on the bearing surfaces. Except in more recent designs provided with some sort of shock absorbing device, beater bearings will still be found to carry plain bottom half bearings only, in order to accommodate the lifting action caused by masses of pulp passing between the roll and the bedplate.

"The beater bearing, whatever its type, is difficult to lubricate properly due to the pressure resulting from possible alternate lifting and dropping of the journal. When this takes place water and pulp will tend to get into the bearing.

"The use of suitable shock absorbers, however, and automatic means of lubrication such as the wick oiler, will obviate the above to a large extent and minimize the detrimental results which would otherwise occur. When such construction prevails, careful attention must be given to the choice of the lubricant. Experience has proven that a medium viscosity straight mineral oil will meet the requirements if bearings are properly aligned and no excessive clearance prevails. Should wear have occurred, however, to increase this clearance it will be well to consider increasing the viscosity. Sometimes a light steam cylinder oil will serve the purpose, although if wear has developed to any marked degree it is not always safe to rely on viscosity alone to protect the bearings. Readjustments would be the more logical procedure.

"Beater and washer bearings on the other hand, cannot always be oil lubricated. On some types when open half bearings are involved or where the taps are provided with recesses or pockets for pad lubrication, grease will frequently be preferred. In such instances a comparatively high melting point product should be used which will not only develop a lubricating film of sufficient pressure resisting ability, but also withstand any washing out effect of water."

We can never rest until the accident problem is under control, and this will mean that we are approaching the goal of "Universal Safety." As a civilized nation we must share the responsibility for the welfare of every human individual—Major Henry A. Reninger.

Current Thought by William Sibley

Paradoxical America

THIS is America, the land of the pioneer, fearless as the bob-cat in the highlands; the land of the industrialist fearful to risk one-tenth his capital. This is America, the land where men and women braved the terrors of the trackless desert; the land where men and women spend much time pounding a golf ball and wondering when the "depression will be over." This is America, the land where indefatigable Hills and Harrimans opened vast empires to colonization; the land where coal mine operators turn to Government for regulation in an effort to solve self-inflicted problems. This is America, where spirited aggression hewed homes from forests and claimed bounty from unturned sod; the land where the wheat-bread we have produced has literally turned to a stone.

This is America, the land where buccaneers have turned racketeers; where Daniel Boones have become Mr. Micawbers; where gold lies dead and buried in the mortuary vaults of La Salle and Wall streets; where the yellow harvests stand a curse; where entire towns remain idle and hungry in the deep shadows of huge mountains of anthracite; where the best available brains are occupied in preparing for a "winter of unemployment." This is America, where the Governor of Pennsylvania and the Mayor of New York City go whining to the President and Congress of the United States that their respective communities are so poverty-stricken and pauperized that they must ask charity from federal hands; the while, in New York City, they are erecting a $50,000,000 "Radio City," and in Pennsylvania, the dairy interests alone produce more revenue than the entire state of Nevada.

What is the matter with us Americans that we no longer have the audacity to take a chance? Where are the much-vaunted red corpuscles which transformed this continent from a virgin area to the richest country in all history—in less than 300 years? By what standard of measurement do we consider that we are impoverished, or impotent to regain active prosperity? What is the matter with the United States that it should be cowed into meek submission by a little pop-gun depression like this? Have we no memories? Have we no sense of proportion?

During the panic of 1837, 168 business houses failed in one month in New York City alone. In the panic of 20 years later, wage earners the country over took a 50 per cent cut, and bread-lines were everywhere in evidence. In 1873, the Civil War reaction left us a panic so severe that 65 railroads were sold under foreclosure, with 20 per cent of our railroad mileage in bankruptcy and 40 per cent of all railroad bonds in the United States in default. During the year of the Chicago World's Fair, 1893, we sustained 554 bank failures and call money went to 74 cents.

Compared with previous periods of hard times, the present depression appears to be little more than palsied prosperity. Never before have we suffered a panic that did not have more bank failures, larger bond defaults, sharper tumbles of commodity prices, longer bread lines, and a much less massive background of national wealth or governmental credit. Yet to-day we have the spectacle of the millionaire hiding his government bonds in a safety-deposit box, and the unemployed meekly accepting the handout from the community chest.

What is the matter with us? Have we grown old and feeble before our time? Have we, during our recent slump, become so dizzy with inertia that we think in circles and can no longer figure out the lost quantity in the same equations that yesterday were so simple? Why is our perspective too warped that we cannot see that present stock prices are higher by from two to 100 per cent than the stock prices of 1923—a year which we have always considered very good? Why are we thinking and talking in circles—just waiting "for something to turn up?" Why is it that probably 50 per cent of the great hoard of salesmen that swarm over this country are doubting their own sales talks?

Frankly, Gentle Reader, I can't answer these questions! I ask them here, not with the thought of giving or gaining an answer, but for the purpose of impressing the fact that our present-day mode of thinking and doing is positively un-American. Note

again the paradoxes contained in the first paragraph. I don't know why, nor what. I only know that, for the ninth part, it is all very silly.

One might in veriest truth say that **never** were we closer to peak prosperity—to extreme business activity. This month, next month, and so long as our unfounded pessimism continues, is the dark before the dawn, the calm before the rapids, because the whole world is anxiously awaiting the return of American activity. William G. Shepard, writing in a recent issue of **Colliers**, ably points to this truth. May I quote and paraphrase? He says:

"A young American commercial attaché found his newly appointed post in Italy a hot one. 'What's the matter with your United States?' business men there would ask him. 'It has thrown the whole world into the dumps. We were leaning on it and now see what has happened!' "

And these European business men were right, because, "half of the business of the entire commercial, industrial and financial world, is done by the United States." And this 50 per cent volume in spite of the fact that our population is only one-sixteenth the total of the world. And to explain the paradox of one-sixteenth the world's population doing more than one-half the world's business is easy, since the answer lies in the simple fact that we are the machinery masters of the world.

We have been spending $23 per year for each man, woman and child in the United States for machinery. The British, whose exportations are the largest in the world, spend by the same yardstick only $10 a year. The Germans are now spending about $9, with the French a close fourth. The difference in machinery expenditure and in mechanical application alone explains the tremendous gap between the producing and consuming power of the United States.

We here in America pay one-eighth of our annual income in taxes. In Great Britain, the tax is one-fifth; in France one-third. Small wonder that European countries spend so much less for machinery and mass production methods. High taxation compels fear on the part of the business man who would be a manufacturer.

The United States is big—**still** big. Probably few of us realize to what extent America influenced the world, how dependently our foreign friends were leaning on us, until our recent efforts to abate foreign debts for one year. The world's over-night response to Mr. Hoover's suggestion brings home again the realization of our greatness and the importance of our world position. Not boastfully nor as a matter of bloated opinion, but merely as a commercial fact, we should realize that the world is made up of two parts: Part One—the United States; Part Two—the rest of the world. When we fully realize this fact we will forget our present financial bewilderment and emerge into another period of world-wide activity.

"In every corner of the world," says Shepard, "business men will tell you that half the business on this earth was struggling back toward prosperity when all of a sudden 'you Americans, with your half of the world's business and financial load, let us drop.' Evidence of this is found in the fact that most of the countries are seeking credit here; credit which if granted would run into the billions of dollars. Yet, with almost 40 per cent of the world's gold supply in our vaults, we had stopped much of our lending.

"How the various nations have recently attempted to help us fulfill their expectations of us, make a romance of the business world. Some of them seem determined that we must not be allowed to fall short and thus help the world to become poorer. There's Japan, for instance, with her silk. We consume 70 per cent of the world's silk, and Japan is keeping most of her mills humming, just as she did in the best of times. The price of silk has fallen from $4 a pound to almost $2. We are paying 50 cents for what was once a dollar's worth of wheat. But the silk business is lively, and ready to soar at the first sign of better times.

"And there's Holland—or at least her possessions. The buzzingest spot in the world, perhaps, is the little island of Sumatra. Her prosperity is only five years old but it is climbing amazingly. And she owes it to the United States that her Malays and Chinamen are riding in their own American made motor cars. How many Americans realize that every alternate tire that presses our highways is made of Dutch rubber? Sumatra is one of the boom spots of the world, thanks to us. And she is repaying us well, since five years ago she had 5,000 motor cars, while today she has 35,000."

One American exporter has said: "Pessimistic Americans keep saying that the United States is in the midst of a world depression, and that this has pulled us down. We're in a depresion all right, but whose depression is it? When I reached New York from abroad the other day I found that most people seemed to think that no prosperity could possibly come to the United States until all the rest of the nations were set right. That's all balderdash. There are plenty of places in the world that will bounce back like rubber balls as soon as the United States starts upward. And that's why I think the return of good times will not be a slow, gradual drag, but will come in a hurry, once it gets started."

There are many problems of grave import and imposing size facing this country. There is quite a difference between the present and past slumps, if only from the fact that we get a different sort of bump when we drop from a twenty story building of recent structure than from a four story brown-stone front. But for the love of Merciful Mud—why all this paralysis of the intellect? Why must we **insist** upon a disproportionate view—a false perspective? We have problems such as unemployment, group planning, overproduction, costly competition, demoralization of our financial structure, government control, all staring us in the face. But are these problems greater than those present when making the things that brought about these troubles? Where are the brains which have made this country what it is—virtually half the world? The United States is on the defensive. Let's start an offensive.

Program of the Paper and Pulp Section of the Twentieth Annual Safety Congress of the National Safety Council

TO BE HELD AT THE STEVENS HOTEL, CHICAGO, ILLINOIS
OCTOBER 12, 13 and 15, 1931

General Chairman, W. J. Brennan, State Department of Labor and Industry, Augusta, Maine.
Vice-Chairman, A. S. Cook, Price Brothers and Company, Ltd., Kenogami, P. Q., Canada.
Vice-Chairman, W. A. Gleason, Hammermill Paper Co., Erie, Pa.
Vice-Chairman, M. G. Hoyman, Kimberly-Clark Corp., Neenah, Wis.
Vice-Chairman, W. H. Jennings, Bogalusa Paper Co., Bogalusa, La.
Vice-Chairman, Arthur Murray, Container Corp. of America, Chicago.
Vice-Chairman, G. W. Phillips, The Champion Fibre Co., Canton, N. C.
Secretary, H. G. Gilson, Oxford Paper Co., Rumford, Maine.

MONDAY, OCTOBER 12
MORNING
ANNUAL MEETING OF MEMBERS

Second Floor, Grand Ballroom

9:30 Invocation.
9:35 Roll Call or Other Ascertainment of Members Present.
9:40 Address of Welcome—(Speaker to be announced.)
9:50 Response and Address—President C. W. Berquist.
10:00 Reading and Disposal of Unapproved Minutes.
10:10 Unfinished Business.
10:15 New Business.
10:20 Address—Samuel Insull, Jr., Pres., Midland Utilities Co., Chicago.
10:45 Presentation of National Safety Council Trophies to Winners of Sectional Contests—By President C. W. Berquist.
Presentation of The Paper Industry Trophy—By E. B. Fritz, Publisher, THE PAPER INDUSTRY, Chicago.
11:15 Address—H. B. Walker, Pres., American Steamship Owners Assn., New York City.

TUESDAY, OCTOBER 13
MORNING

Fourth Floor, Room No. 430A

9:45 Résumé of Year's Activities—General Chairman, W. J. Brennan.
10:15 Trend of Accidents in Paper and Pulp Industry—E. E. Grant, Chairman, Statistics Committee.
10:35 Discussion.
10:45 Why Safety Must Be a Part of Our Daily Tasks—J. J. Plzak, Safety Dir., Consolidated Water Power and Paper Co., Wisconsin Rapids, Wis.
11:10 Discussion.
11:20 Safety on the Paper Machine—Allan Hyer, The Black-Clawson Co., Hamilton, O.
11:45 Discussion.

TUESDAY, OCTOBER 13
AFTERNOON

Fourth Floor, Room No. 430A

2:00 Hazards Peculiar to the Box Board Industry and Their Elimination—R. S. Hiney, Asst. Mgr., Ogden Div., Container Corp. of America, Chicago.
2:30 Discussion.
2:45 Election of Officers.
3:00 Question Box.
(Questions unanswered will be assigned for discussion in members' rooms on Wednesday.)

THURSDAY, OCTOBER 15
MORNING

Fourth Floor, Room No. 430A

9:45 Electrical Hazards of the Pulp and Paper Industry—H. D. Banta, Hoberg Paper and Fibre Co., Green Bay, Wis.
10:10 Discussion.
10:20 Unusual Accidents and Their Remedies—G. T. Adams, General Supvr., International Paper Co., New York City.
10:45 Discussion.
10:55 Report of Unanswered Questions Assigned Tuesday.

THURSDAY, OCTOBER 15
LUNCHEON

Third Floor, Private Dining Room No. 1

12:30 Data on the Contest and Awarding of Certificates—A. Scott Dowd, Chairman, Contest Committee.

THURSDAY, OCTOBER 15
AFTERNOON

Third Floor, Private Dining Room No. 1

2:30 Hazards Peculiar to Sulphite Manufacture and Their Remedies.
(Speaker to be announced.)
2:55 Discussion.
3:05 The Difference Between Carelessness and Unsafe Practices—M. G. Hoyman, Dir., Main Office Service Unit, Kimberly-Clark Corp., Neenah, Wis.
3:30 Discussion.
3:40 Organization of Safety Activities on the Pacific Coast—R. H. Scanlon, Powell River, B. C., Canada, Regional Dir. for Pacific Coast, Paper and Pulp Section, N. S. C.
4:05 Discussion.

Safety Exhibit

Practically every safety device known will be displayed in the Exposition Hall of the Stevens Hotel. The U. S. Navy will display a model of the new type hangar with the airship ZR-4 recently launched at Akron.

Westinghouse Electric & Mfg. Co. will present two interesting mechanical developments. One of these will be the "robot," a mechanical man who does everything but think. Another device which offers great possibilities in accident prevention, fire protection and increased plant efficiency is the photo-electric cell—the "electric eye."

Wednesday is Paper and Pulp Section Day at the Exhibit.

T.A.P.P.I. Fall Meeting

Three-Day Convention at Kalamazoo Will Include Special Social Features with Business Sessions and Trips to Mills

RALPH A. HAYWARD, general chairman of the committee in charge of arrangemnts for the fall meeting of the Technical Association of the Pulp and Paper Industry which will be held in Kalamazoo, Mich., September 24 to 26, 1931, announces details of the program of business and social events, which indicate that a wide variety of subjects are to receive the attention of the visitors.

Registration desks will be provided in both the Columbia and Park American hotels, which are directly opposite each other with meetings scheduled at both places.

At the first business sitting in the Columbia hotel on Thursday morning, papers will be read as follows:

Sulphate of Alumina, by J. J. Healy, Jr.; An Attempt to Develop a Laboratory Procedure for the Determination of the Sizing Ability and Efficiency of Beater-Sizing Agents, by A. C. Dreshfield, H. G. Haggerson and Henry Heller; A Study on the Bleaching of Kraft Pulp, by Dr. Otto Kress and Roy L. Davis.

Luncheon will be served at 1 o'clock, when papers will be read by H. G. Noyes, on Determination of Training Problems in the Pulp and Paper Industry; and by J. K. Speicher on The Story of Nitrocellulose, illustrated with moving pictures.

This sitting will be adjourned at 3:30 p. m. when members may visit the plants of the Rex Paper Company and Hawthorne Paper Company, or play golf.

Special Meeting of Purchasing Agents

The Buyers' Group of the National Association of Purchasing Agents will assemble for a special meeting at this time when the subject of Pulp Contracts will be discussed. This group has in mind to broaden the specifications covering pulp purchases, particularly as regards strength standards, cleanlines, and any other specifications of value to the consumer. The committee feels that the chemists are vitally interested in these subjects and therefore has arranged for this meeting in order that both the buyers and technical men may have an opportunity to get together and express their views on this subject.

There will be an informal dinner at the Columbia hotel in the evening at which addresses will be made by the Mayor of Kalamazoo, President Krimmel of T.A.P.P.I. and Jacob L. Crane, city planning engineer.

Friday's Events

The program for Friday provides a bus ride to Parchment, Mich., the start being made at 9:30 o'clock. In the auditorium of Parchment Community House, beginning at ten o'clock, deinking processes for the recovery and remanufacture of waste paper will be discussed and the following papers read:

Deinking Wastes, by C. C. Irving; Deinking Waste Paper Stock, by C. A. Shubert; Steam Requirements for the Deinking Process by E. G. Milham.

A contribution from the Forest Products Laboratory will be presented on The Reuse of Relief and Waste Liquors in Sulphite Cooking Acid, the authors being G. H. Chidester, H. E. Hrubesky and J. N. McGovern.

In the Community House dining room following luncheon at one o'clock on Friday afternoon, papers will be presented and discussed as follows:

Technical Co-operation in the Development of Cost Standards, by Thomas J. Burke; The Estimation of Cellulose in Pulps by the Kurschner-Hoffer Method, by Dr. Harry E. Lewis, and Alcohol-Nitric Acid Method, by E. R. Laughlin; Air Conditioning in the Paper Industry by W. G. Schlichting.

At the close of this sitting, visits will be paid by members to the mills of the Kalamazoo Vegetable Parchment Company and laboratories of the Paper Makers Chemical Corporation, with the alternative of playing golf.

An informal dinner will be given at the Park American hotel at 6:30 o'clock, with W. J. Lawrence as presiding toastmaster. The principal address will be made by Dr. W. D. Henderson of the University of Michigan whose subject will be Cycles of Civilization. The Kalamazoo Valley Section of T.A.P.P.I. and its officers will be installed during the dinner by officers of the national association.

Saturday Papers

The program for Saturday morning includes a bus ride to the Gull Lake Country Club where a business sitting will be convened for the presentation and discussions of the following papers:

A Comparison Between Flint Pebbles and Porcelain Balls as a Means of Hydrating in the Pebble Mill Test, by F. C. Peterson; The Relation of Strength Properties and Fiber Properties in Paper, and The Variation of Tensile Strength with Basis Weight and Related Factors, by R. H. Doughty; Some Notes on Loss in Yield and Quality of Pulp as Occasioned by Recooking It in Digesters Which Were Not Blown Clean, by Dr. Otto Kress, Harry J. Irwin and Karl L. Buff; Hydration Measurements by the Boiling Method, by T. R. LeCompte.

Following luncheon on Saturday afternoon, E. F. Whittington, presiding, papers will be presented on Measuring the Efficiency and Proving the Value of the Chemical Engineer, by H. C. Bradford; Measurement of Opacity of Paper, by Doctor M. N. Davis, and Chrome-Nickel Castings in the Sulphite Industry, by B. S. Summers and J. D. Corfield.

A recreational program will follow, with golf, quoits, swimming and boating.

Provision has been made for the entertainment of ladies who may attend the convention.

Cornell Wood Products Celebrates

The management of the Cornell Wood Products Co., Cornell, Wis., values the observance of safety rules to such an extent that it has established the practice of rewarding its employees in recognition of their safety work.

Up to August 21, this company had gone 426 days without a lost time accident and to observe this record, the company declared a holiday to celebrate the fourth annual safety picnic. It was a day of joy and festivity for the employees and their families, and the company spared no expense to make the event one to be long remembered.

Northwest Paper to Manufacture Tub-Sized Papers

The Northwest Paper Company has recently installed at its Cloquet, Minn. mill, equipment for the production of tub-sized offset stocks and index bristols as well as specialty papers. In addition, this mill will continue to furnish its established line of unsized papers.

Through the addition of equipment built to latest specifications for tub-sizing, The Northwest Paper Company is in a position to meet a demand which it heretofore has been unable to supply and welcomes an opportunity to submit samples to customers and prospects, according to I. L. Gartland, sales manager.

Farrel-Birmingham Branch Office Changes

The Farrel-Birmingham Co., Inc., of Ansonia, Conn., has opened a new office in Chicago, located in the First National Bank building. Harry Temporal, sales representative of the company for 21 years, will be transferred from the Akron office to assume charge of the Chicago office.

The Akron office, in charge of Andrew Hale, has been removed from the United building to 2710 Central Depositors Bank building.

A Modern Board Mill

An Account of the Novel and Interesting Fabricating Equipment of the Oswego Board Corporation's New Plant at Oswego, N. Y.

By HARRY E. WESTON

Staff Representative

THE new board mill of the Oswego Board Corporation, a subsidiary of the St. Regis Paper Company, at Oswego, N. Y., a town of 25,000 inhabitants, on Lake Ontario, about midway between Rochester and Watertown, occupies a tract of land covering some 30 acres, which provides ample space for expansion. Railroad facilities are excellent, the plant being served by both the New York Central lines and the Ontario and Western Railroad. In this plant, designed for the manufacture of insulation board, a novel and interesting process is employed.

Buildings

The main part of the plant includes three buildings which are constructed as an integral unit. These buildings may be individually designated as Pulp Preparation, Machine, and Storage and Shipping. The pulp preparation building is 100 ft. x 300 ft., the machine building is 110 ft. x 300 ft., and the storage and shipping building is 90 ft. x 300 ft.

The integral arrangement of the buildings creates, therefore, a unit 300 ft. square. The symmetry of this unit is broken at the outside front corner of the shipping building by the boiler plant building. This building is 35 ft. x 51 ft. and joins the shipping building on one of its 35 ft. sides.

The buildings for the most part are of concrete, brick, and structural steel construction with monitor type roofs on the three main buildings. Most of the floors within the various buildings are of concrete. Natural lighting is accomplished largely through Bliss Steel Products Corporation steel frame windows located in the monitors. A well arranged electric lighting system meets the artificial lighting requirements and a Grinnell sprinkler system throughout the plant protects it against the ravages of fire.

The roofs of the various buildings are covered with built-up roofing, and there are installed at critical points a number of Swartwout ventilators for discharging from the several buildings to the atmosphere vitiated or undesirable air.

The buildings are heated through York heat diffusing units which are constructed at various points throughout the plant. These heaters receive steam from the boiler plant, the only function of the plant being to supply steam for this purpose. No steam is employed in any of the process operations within the plant.

Provision was also made in the design of the buildings for suitable washrooms and lavatories which are conveniently placed and well equipped to meet the needs of the working force.

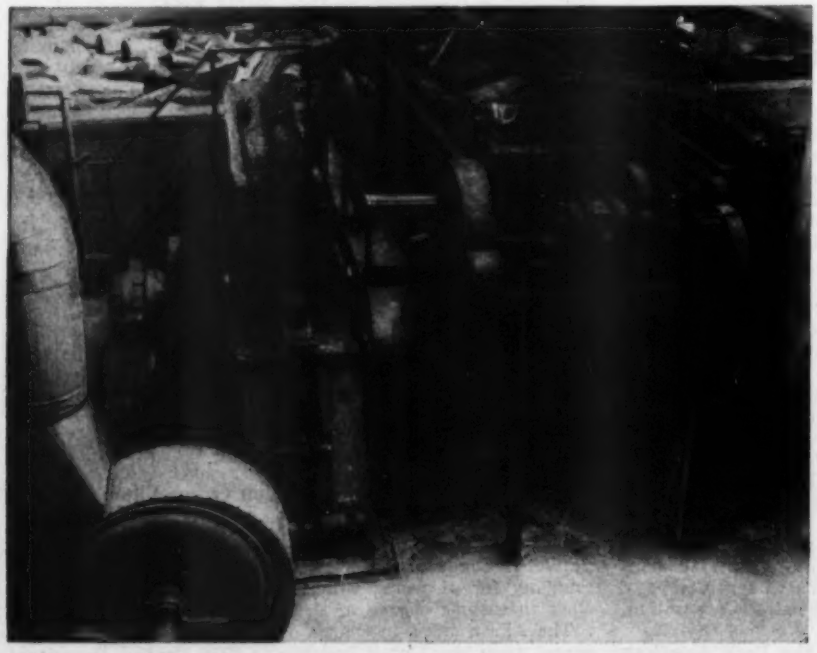
Raw Material Storage

Wood is received at the plant in 24 in. and 32 in. lengths from company holdings and from other plants operated by the company. This wood supply, largely of spruce but mixed with some hemlock and balsam, is stored near the plant until ready for use. The block pile at the present time contains approximately 8,000 cords of wood.

The sulphite screenings and the groundwood pulp are both obtained from other plants operated by the company. These raw materials are stored in the pulp preparation building adjacent to the equipment in which they are processed.

Trimmings are obtained from the cutting of the finished board to definite sizes. This material serves as one of the raw materials entering into the production of the finished board. Through this utilization of trimmings, raw material waste in the process is reduced to a minimum.

The only other raw material which enters into the production of the finished board is the size. This material is prepared at the plant specifically for the purpose.



Defibering machines, log pond and blowers for wood fiber in Oswego mill

Conveyors and Pulp Preparation

A log pond made in the form of a vat approximately 550 ft. long and 12 ft. wide x 3½ ft. deep is employed to deliver the wood blocks into the pulp preparation building. The water of the vat acts not only as a conveyor for the wood but also washes it and exerts a softening action.

The wood from the log pond is conveyed over a short-chain-type conveyor to two Allis-Chalmers MacMillan defiberizers. Each machine has a capacity of approximately 35 tons of fiber every 24 hours. The defiberization of the wood is accomplished through the action of specially designed cutting heads in the defiberizing machines.

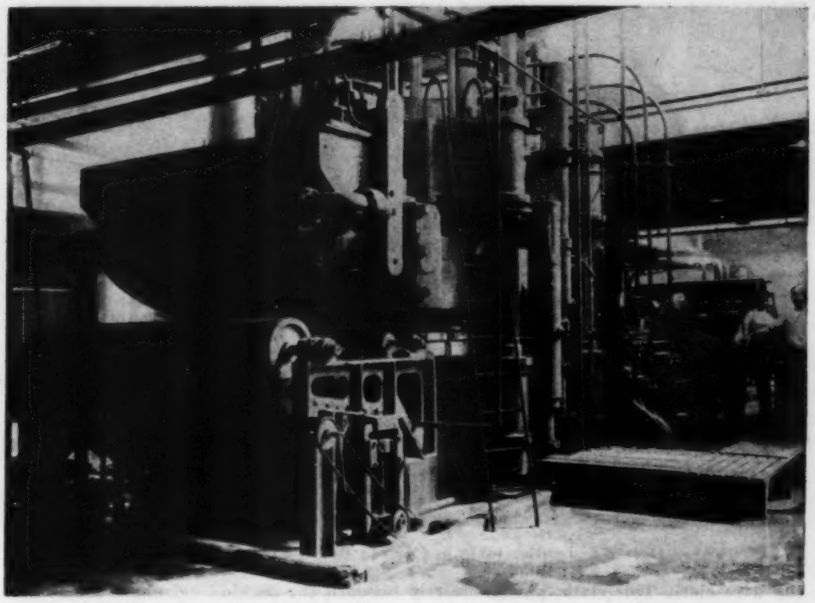
The wood fiber from the two defiberizing machines is blown by means of an individual American blower for each unit into a cyclone arrangement on the roof of the building. The fiber from the cyclone drops by gravity to a Williams hammer mill. A passage of this fiber through the hammer mill reduces the proportion of slivers and diminishes the possibility of process difficulties at a later point in the operations. The hammer mill is directly connected to a 200 hp. General

Electric motor with an operating speed of 1,170 revolutions a minute.

In the cyclone arrangement is a second cyclone which simply recovers the carry-over from the first unit. Such fiber as is recovered in the second unit does not pass through the hammer mill; it drops by gravity into a stock chest where it is agitated with the fiber from the hammer mill and the other fibrous materials which enter into the production of the board.

Two two-ton Shepard cranes with a span of approximately 50 ft. are used to handle both the sulphite screenings and the groundwood pulp. The two cranes operate on one bridge which extends nearly the full length of the pulp preparation building along the inside of the outside wall. These cranes are used to store the pulp and also to transport it to a Williams shredder where it is reduced along with the trimmings which are also delivered to the same machine.

The shredded stock—a mixture of sulphite screenings, groundwood pulp and trimmings—is elevated by means of a flight conveyor and is discharged into the stock chest containing the wood fiber. At this point the shredded pulp stock is mixed with the wood fiber. Water is added to the chest in order that the stock may be circulated at about three and a half per cent density.



Board fabricating machine in mill of Oswego Board Corporation, Oswego, N. Y.

Processing Equipment

Alongside of this chest and built integral with it is a second chest of approximately the same shape but larger in size. Both chests, with concrete sides and bottom as well as top, resemble huge beater tubs and are equipped with midfeathers. Each chest is also equipped with four Noble & Wood agitators which are individually driven through Falk speed reducers and G. E. motors.

The chests have been designed to handle a full 24 hour run of stock. With such large capacity, it is possible to operate with fewer variations in quality of product.

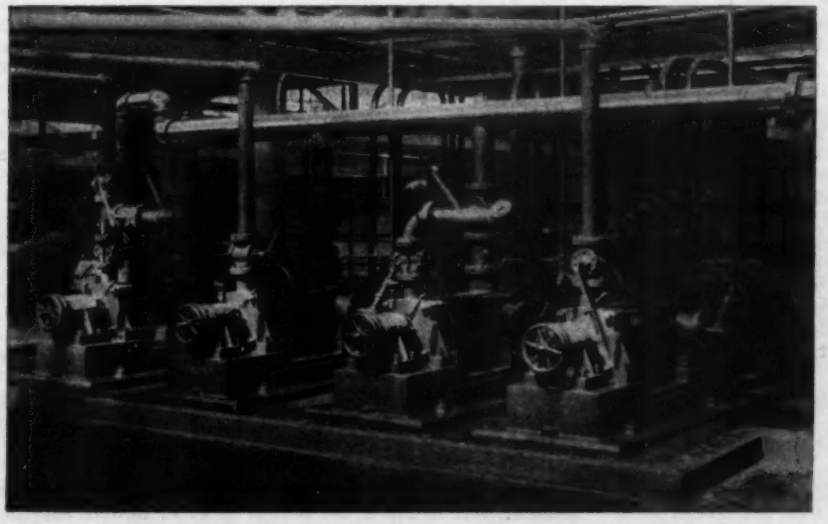
The circulating stock in the first chest is pumped continuously through an 8-in. Kingsford centrifugal, equipped with a so-called rag impeller, to four Wiener refiners. The refiners are installed on the concrete top of the two stock chests. Two of the refiners are set up in tandem while the other two function separately. One single unit is commonly used as a stand-by. Each refiner is directly connected to a 200 hp., 1,800 r.p.m., G. E. motor. It should be noted that a refiner operating to capacity uses approximately 150 hp.

The refiner, developed primarily to refine very raw wood fiber, somewhat resembles a jordan in appearance. Stock, however, enters the refiner at the large end of the unit and is discharged at the small end. The piping arrangement to the refiner and the adjustment features on the machine themselves permit control of the stock through wide variations.

From the Wiener refiners the stock discharges through a constricted pipe opening for each machine to the second chest. A special sizing material is added to the stock as it circulates in this chest. The size is added continuously, the amount being controlled by a float valve and box arrangement.

Without further processing, this stock is pumped by means of another Kingsford centrifugal of the same design as the one previously mentioned to a specially designed forming press, the consistency of the stock being controlled by a Trimbey automatic consistency regulator.

This pumping operation causes the process operations to pass from the pulp preparation building to the machine building where equipment for fabricating, drying, and trimming the board is installed.



Battery of Wiener refiners in Oswego Board Corporation mill

The Fabricating Machine

The fabricating machine consists of a specially designed forming press with its auxiliary equipment. Although the machine is complicated in appearance, the functions which it performs are fundamental to a papermaker. A definite quantity of stock is discharged upon a 40-mesh wire cloth in such a way that it is deckled and pressed to form a sheet of definite proportions. This sheet is then discharged from the machine to an unloader from which it is conveyed to the dryers.

The operator of the fabricating machine controls each individual operation in the forming of the board in a manner which is nearly automatic. When the vats, comparable to the head box of a Fourdrinier machine but with one on each end of the press, are filled to the required point, the deckle is dropped into position upon

Dryers and roller table in Oswego Board Corporation mill

the wire cloth. This cloth, placed directly beneath the deckle, is operated intermittently. As soon as the deckle is in position upon the stationary wire cloth, which in turn is supported by a perforated platen, the stock contained in the two vats or head boxes of the press is discharged upon the wire and the sheet of board is felted. The upper platen is then brought down upon the newly formed board placing a tremendous pressure upon it. Following the pressing of the board, the deckle and upper platen are raised free from the sheet. The wire cloth then travels forward and discharges the pressed board upon an unloader. The wire cloth at this point, not being endless, reverses its direction of travel and takes its original position under the deckle of the press. In the meantime, the vats of the press have filled with stock and everything is in readiness for repeating the operations of fabrication.

The wet sheets of board are transferred from the unloader to the dryer installation. This installation consists of three specially designed electrically heated units with a total capacity of 150,000 square feet of board a day. These dryer units are charged and emptied intermittently. An ingenious rack has been designed at the plant to handle a complete charge from an individual dryer unit, permitting the boards to cool before cutting to size. This rack resembles somewhat the hubs and spokes of a wheel without the rim or tire. The boards, resting upon the spokes of the rack, extend from the hub to a short distance beyond the ends of the spokes. Since the rack moves on the hub it is possible to load and unload it easily.

The conveyor arrangement from the dryers to and through the edger and trimmer, with the exception of the cooling rack, includes two units of Matthews roller type conveyors. The unit to the edger and trimmer is approximately 105 ft. long and 10 ft. wide. It is placed conveniently to the discharge openings of the three dryer units and is constructed parallel with the discharge side of the dryers.

The second conveyor unit, built parallel to the first conveyor and with only an aisleway between them, is approximately 90 ft. 6 in. long and 12 ft. wide. This conveyor, operating in the opposite direction from the first unit, receives the board cut to size by the edger and trimmer and discharges it to trucks by which it is transferred to storage or to cars for shipment.

The board cut to size and arranged on Reynolds Improved trucks is then transported through a well placed doorway from the machine building into the storage and shipping building.

Little equipment other than tables for wrapping are to be found in this building. It is given over practically in its entirety to storing and shipping.

Certain orders necessitate wrapping the board into neat bundles of a few sheets each. Approximately ten per cent of the board is wrapped in this way previous to shipment.

Six curtain doors are set in the outside wall, directly opposite the wall adjoining the machine room. Cars are spotted conveniently to these doorways and are loaded directly through them. Six cars can be spotted along the shipping platform.

Laboratory Equipment and Tests

A well equipped laboratory for control work has been constructed in the storage and shipping building. The major items of equipment within the laboratory include one hot room for conductivity tests, one set of electrically heated hot plates, one small hand press for production of sample board, one five-pound Dilts heater, one Mullen tester, one ten-pound Toledo scale graduated to read in quarters of an ounce, one Tinius Olsen modulus of rupture and tensile strength machine, one Southwark laboratory hydraulic 26-ton press and one Williams New Precision Model freeness tester. The hot room for conductivity tests is electrically heated and was designed at the plant.

Tests which are commonly made in the laboratory include freeness, density of stock, acidity of stock with a LaMotte hydrogen ion comparator, sizing, rupture strength, tensile strength, bursting strength, pull test—a nail-tear test, moisture determinations on sulphite, groundwood, and board, percentage of sulphite and groundwood in furnish, water absorption, and tests on conductivity.

Steam and Electric Power

The boiler plant mentioned previously consists of two 200-hp. Ames boilers connected to an 80-ft. Ames self-supporting stack. Steam generated within these boilers is used only for heating the buildings. No steam is used for process work or to develop electrical energy.

Electrical energy is purchased from the Niagara Hudson Power Corporation for driving all machinery and for supplying heat to the dryers for drying the board. The electrical load on the plant totals about 75,000 kw. a day.

Most of the motors and electrical equipment within the plant were manufactured by the General Electric Company. In addition to the G. E. motors are a few Allis-Chalmers motors which are used to drive some of the special equipment.

The board produced within the plant is commonly made in sheets to trim 8 ft. x 12 ft. x ½ in. The weight of such a board approximates 750 pounds per 1,000 square feet. The thermal conductivity of this board ranges from about .308 to .315 B.t.u's per cubic foot per hour.

This product is sold through the Johns-Manville Corporation of New York City. Such a sales plan eliminates the necessity of maintaining an individual sales staff for the board plant.

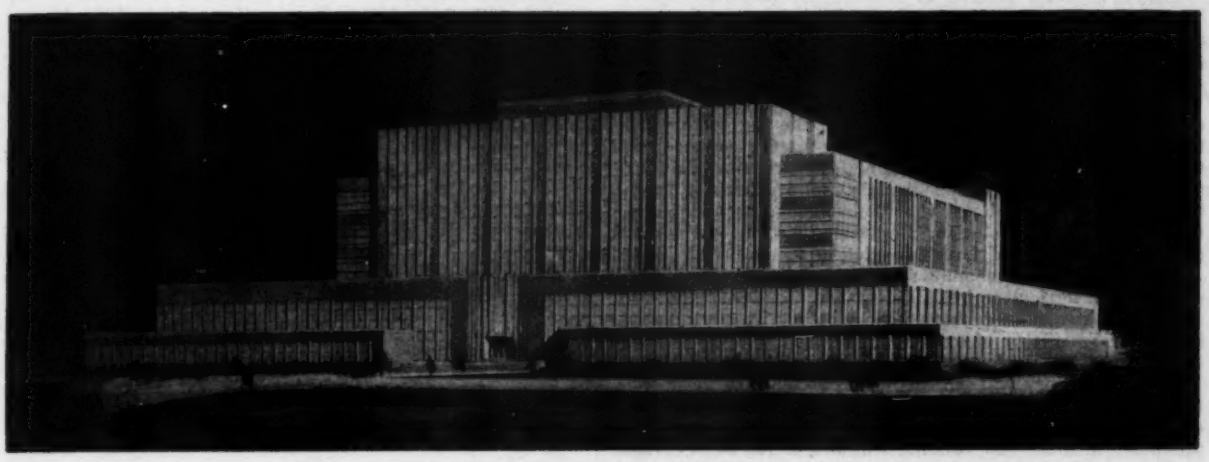
Management of the Corporation and Plant

As stated, the Oswego Board Corporation is a subsidiary of the St. Regis Paper Company. The main office of the company is situated at 60 East 42nd street, New York City.

The officials of the company include R. K. Ferguson, president; R. B. Maltby, vice-president; C. R. McMillen, vice-president; H. E. Machold, vice-president; C. E. Norris, vice-president; W. H. Versfelt, secretary; and C. B. Martin, treasurer.

The operating management at the plant include John A. Wiener, plant manager; J. B. Harmon, mill superintendent; and Patrick Clancy, office manager.

A figure well-known in the paper business passed away in Montreal last month in the person of P. F. Rowell, superintendent of J. C. Wilson, Ltd.



Architect's drawing—Holabird and Root, Chicago

New Forest Products Laboratory

The Largest and Most Complete Establishment in the World for Research on Wood Will be Constructed at Madison, Wis., Under Government Contract Just Awarded

PROVIDING for the construction at Madison, Wis., of the largest and most complete establishment in the world devoted to research on wood, contract has been awarded by authorities of the U. S. Department of Agriculture, Washington, for a new fireproof building for the Forest Products Laboratory, to be completed in one year. This contract is the principal award under a $900,000 Congressional appropriation to provide the Laboratory with adequate quarters and equipment.

Better utilization of forest materials and broader markets for forest products are the objectives for which government research workers will use the new facilities. In its six stories, with total floor space of 175,000 square feet, the building will contain modern technical and scientific facilities for testing and investigating wood and other forest products in manifold uses and transformations, from logs, poles, and lumber to pulp, paper, and turpentine.

Dry Kiln Equipment

A large group of dry kilns equipped for close control of temperature, humidity, and air circulation will help to solve the problems of seasoning many species and types of wood. A cold storage chamber will be provided in which green logs and timber can be kept in unchanged condition for experimental work at any time.

Since every step of wood manufacture and construction and the satisfactory performance of wood in service are influenced by moisture conditions, a number of humidity rooms will be provided in which wood can be brought to the exact moisture content desired for study under conditions simulating any season of the year or any climate of the temperate zone.

Timber and Pulping Research

Machines for testing timbers and framework up to a breaking load of 1,000,000 pounds will be served by cranes in a testing gallery accommodating pieces and panels as large as 30 feet high and 100 feet long. Tests of boxes and shipping crates can be carried on at any degree of dryness or dampness that would be met in service by storing and testing the containers in a special moisture-control room served by movable machinery.

The pulp and paper research laboratory, occupying six floors at one end of the building, will include grinder equipment, a digester tower 40 feet square, beating and refining apparatus, and an experimental paper machine with all moving parts under precision control. With this equipment, the study of various American woods as pulp and paper raw material will be continued, along lines that have already broadened the pulpwood market and pointed the way to improved chemical pulping.

X-ray Room for Wood

Among unusual features of the building will be an ultraviolet ray chamber, where wood can be sterilized for mycological studies and where paints and other materials can be exposed for test, an X-ray room providing for the examination of the minute structure and growth characteristics of wood, a microphotographic studio, and a stone table and shaft for ultracentrifuge apparatus to determine molecular sizes of cellulose and other wood components.

Provision is made for a large timber preservation laboratory, a wood fermentation unit, fractionating stills, a general section of wood chemistry, wood gluing, painting, finishing, and fireproofing laboratories, and facilities for the study of wood fungi and insect pests and the abatement of their damages.

Modern Service Facilities

To serve this establishment, extensive equipment will be required, including a railway siding, a power plant of 630 boiler horsepower, and a number of service elevators, hoists, and monorails. Direct and alternating electric current at various voltages will be supplied to workrooms, and steam at high and low pressures will be piped to processing apparatus. Chemists' benches will be supplied with water, gas, compressed air, steam, and electricity. A forced ventilation system will be used for chemical hoods, pulp digesters, and other units as required.

A sawmill, planers, and complete woodworking shop will prepare test material in all sizes, shapes, and forms of construction needed, while wood for experimental pulping and paper making will be prepared in a room equipped for barking, chipping, and grinding.

To Make Forests Profitable

The Forest Products Laboratory is part of the Forest Service, U. S. Department of Agriculture, which administers the

country's greatest reserve of timber, the national forests. "Forestry is concerned not only with timber growing, but also with the efficient use and profitable marketing of forest crops," said Carlile P. Winslow, director of the Laboratory, in explaining the purposes of the new building.

"The perpetuation of our forests and the reforestation of otherwise idle land largely depend upon the degree to which trees can be profitably converted into useful commodities. Consumption of lumber, for example, is increasingly a matter of competition of other materials, and problems of diminishing use have perplexed the lumber industry and tended to discourage reforestation. Profitable use of our forests must be the keynote of forest growing in the future.

"Success in the economic restoration of idle forest and submarginal agricultural lands demands the development of new uses for wood to replace those captured by other materials, the modernizing of existing wood uses, and the adaptation of wood to complex and changing requirements.

"The Laboratory will increasingly contribute to these ends through the improved facilities for physical, mechanical, chemical, and biological research on wood and other forest products which the new building will afford. The work carried on for several years past by the staff of nearly 200 has taxed available facilities, and since Congress has already authorized the doubling of the annual operating appropriation, the need for new and larger quarters is imperative."

Co-operation with University

Since the Forest Products Laboratory was opened by the U. S. Department of Agriculture, in 1910, it has occupied buildings owned by the University of Wisconsin. This assistance is based on the original co-operative arrangement whereby the Laboratory is available to the university faculty and advanced students for research, and its staff gives lectures in the university on wood chemistry and technology and other subjects related to forest utilization.

The university board of regents has aided the new building project by donating a choice site of 10 acres overlooking Lake Mendota and the university campus.

Construction Features

In general plan, the new building will be U-shaped, about 275 feet in length and over-all breadth. It is of modern design, emphasizing "stepped-back" construction, vertical lines, and large areas of glass in the external walls. By terms of the Congressional authorization act, the building will be of fireproof construction throughout.

C. B. Fritz & Company of Madison, Wis., were the successful bidders. Holabird and Root, Chicago, are the architects. Davidson and Constable, Stamford, Conn., assisted in the landscaping design.

The modern spirit which dominates the design has discarded outworn symbolism, according to the architects, who gave the following comments on their plans:

"The architectural conception of the building is essentially modern in its effort to achieve, through the massing of the required utilitarian elements of the structure and through the treatment of the preponderant surfaces of glass, a classical and balanced whole suitable to the dominating site. This is an attempt at the true classical feeling through the natural dictates of the problem, rather than through the use of obsolete forms and expensive decorative elements. If this effort is successful, it will have been achieved in a logical manner and with a minimum of expense."

Personnel Changes in Elliott Service

Elliott Service Co., Inc., of New York City, through its president, George J. Kadel, announces the following executive personnel changes:

R. T. Solensten, former manager of the industrial division to become vice-president; J. O. Emerson, editors of the National Board of Foremanship, to become manager of the industrial division.

Mr. Solensten is well known in industrial management and industrial relations circles because of his many years of experience in the creation of educational display material designed to stimulate the interest and co-operation of employees to prevent accidents, eliminate waste, and maintain quality and quantity standards in production. Prior to joining the executive staff of the Elliott Service Company in 1926, he was director of the poster division of the National Safety Council.

Although continuing to exercise general supervision over the industrial services produced by his company, Mr. Solensten in his new position will assume direction of more extensive research in industrial educational methods that has been planned by the Elliott organization.

Mr. Emerson, who succeeds Mr. Solensten as manager of the industrial division, has long specialized in foremanship training and development work and is a recognized authority in that field. He will have direct charge of production and distribution of the Elliott industrial service, bulletin board displays, suggestion systems, and other management helps, including the booklet series entitled "Management—An Information Service for Foremen, Department Heads and Supervisors."

Northern Paper Mills Builds New Laboratory

Erects Finely Equipped Establishment for Technical Research and Control in Green Bay, Wis.

THE construction of a research laboratory building for the Northern Paper Mills and associated companies in Green Bay, Wis., was begun on December 15, 1930. The building has now been completed and partly equipped. It is situated about 300 feet east of the mill on land previously acquired by the company. It is about 200 feet back from Day street facing south and is to form a detached back unit of a hollow square of office and administration buildings to be built in the future.

The building is 106x32 feet, extending east and west and is two stories in height with no basement. It is constructed of concrete, brick and steel. All walls and partitions are of Haydite blocks with a veneer of face brick on the front and both ends and stone cornices and stone entrance. The back is unfinished, except for a stucco coat, so that future expansion may be taken care of without disturbing the present structure. Interior walls are plastered in the offices and small laboratories but unfinished in the process laboratory and digester room. Floors are of re-enforced concrete covered with battleship linoleum in the laboratories and with asphalt tile in the office and halls.

On both floors, a six foot hall extends nearly the length of the building at the back, with the laboratories to the front. When additions are built, this will be a central hall with laboratories opening from it on each side. The building is equipped throughout for steam, compressed air, vacuum, gas, hot and cold water, distilled water, and electricity at 110 volts A.C., 220 volts A.C. and 110 volts D.C.

The building includes an office, 12x15 feet; a process and development laboratory, 30x32 feet, open to the roof except for a balcony along two sides; a general analytical laboratory, 23½x27 feet; a small laboratory 15x23½ feet; a library and directors' room, 20x30 feet; three other laboratories, one 15x23½ feet and two, 12x23½ feet; balance room, storerooms and closets.

The process and development laboratory contains apparatus for measuring and pulping wood and for pulp testing, including a stainless steel lined and steam-jacketed digester with control instruments, a blow-pit tank, a 24-inch wet machine, a four plate flat screen, mixing tank and pumps, a standard cord rack, submerging and measuring tanks for cordwood, and weighing scales. On the balcony, through which the digester extends, are a laboratory desk, hand sheet machine, electric sheet dryer, hydraulic press, a 1½ pound beater, stainless steel ball mill, freeness tester, and two acid-making tanks.

The general laboratory contains two central, laboratory tables, each 4x12 feet with piping, stone tops, ceramic sinks, and wooden drawers and cabinets. Also there are two fume hoods and a steam bath, each 2½x5 feet with stone table tops, transite hoods and wooden cupboards. Ovens and muffle furnace and writing desks for the chemists are also here, with space for supplementary equipment when necessary.

The smaller laboratory has a chemical wall desk and sink

and a small hood and three tables 2½x6 feet. In this laboratory are temporarily located, pending the installation of a constant humidity room, a microscope table with accessories, and the paper testing instruments, these being a motor-driven tensile tester, motor-driven bursting tester, motor-driven folding tester, tearing tester, micrometer, and paper scales.

In the adjacent balance room are installed an analytical balance, two rough balances, and a barometer.

The library and directors' room is a large room 20x30 feet and it serves two purposes: first as a directors' room, and second as a library. It is entirely panelled with stained birch except for one end which contains shelving and a stone fireplace. It is carpeted, indirectly lighted and contains a large table and chairs. This table and chairs are also used for the library function. A magazine rack, pamphlet and patent file and card catalog complete the furniture. The books include the bound back volumes of the American Chemical Society, sets of reference books on organic, inorganic, physical, analytical, and industrial chemistry, with numerous single volumes dealing with paper and pulp making and testing and related subjects. Numerous reprints, pamphlets, government bulletins and patents are received and indexed.

The three other laboratories mentioned are not now equipped, but are temporarily in use as offices by two departments of the main office.

The staff at present consists of the director, Dr. Merrill A. Youtz and two assistants. Dr. Youtz is a graduate of Lawrence College at Appleton, Wisconsin, and received the Ph.D. degree from Massachusetts Institute of Technology. He was for eight years previous to the present connection on the research staff of the Standard Oil Company of Indiana. Mr. E. H. Johnson is also a graduate of Lawrence College with a Ph.D. degree from the University of Illinois. He was for several years a chemist for the Fox River Paper Co. of Appleton, Wis. Dr. B. E. Lauer is a graduate of Oregon State College with a Ph.D. from the University of Minnesota.

It is believed that with the above-mentioned personnel and equipment, together with later additions as necessary, it will be possible to very thoroughly investigate many technical phases of the manufacture of products of the Northern Paper Mills and associated companies, maintaining and advancing the present high standards of those products. The establishment of this laboratory by the directors of the Northern Paper Mills evidences their belief that technical research is not only desirable but increasingly necessary in pulp and paper making in order that economies of operation may be effected, improvements in processes and products brought about, and new processes and new products be introduced.

The construction and equipment of this laboratory is only the latest of a long sequence of forward-looking improvements in the Northern Paper Mills. These have extended over the last several years, and they, together with the careful selection of men, place the company among the leaders in their field of pulp and paper manufacturers.

New Rubberprint Process

An interesting demonstration of rubber printing plates was made on Thursday evening, August 6, at the plant of the Rubberprint Equipment Corporation, 200 Varick Street, New York. Some 50 representatives of the paper and printing industries were the guests of H. H. Heinrich at a supper party preceding the demonstration. Mr. Heinrich is well-known in the graphic arts field by the firm of H. H. Heinrich, Inc., producers of paper bag machinery, aniline printing plates, web offset presses and similar equipment. He is general manager of the Rubberprint Equipment Corporation which has put on the market a new hydraulic-electric vulcanizer for making rubber printing presses, which differs in many respects from any equipment heretofore used for this purpose. It is said to produce perfect rubber plates 65-screen halftone, line cuts, and type and rule matter of all kinds, for printing on any kind of surface, with either rotary or flat-bed presses, using either oil-base, watercolor, or aniline inks. The complete equipment includes not only the vulcanizer, but also a grinder for truing-up cuts before moulding and a saw for trimming the moulds which are used in this process.

While rubber plates made by the new hydraulic-electric vulcanizer are at present used mostly for printing on uneven surfaces, such as paper bags, it is believed by the manufacturers to be well adapted for bond papers, glassine, cellophane and special papers generally. With the Rubberprint Process and aniline inks, which dry instantly, there is said to be no danger of offset, no sticking, and no smearing.

St. Helens Operating New Machine

Second Paper Machine Installed by Pacific Coast Mill for Handling Lightweight Kraft Paper

NOTABLE among expansions on the Pacific Coast is the recently completed lightweight kraft unit of the St. Helens Pulp & Paper Company, St. Helens, Oregon. This company began the manufacture of paper in the year 1926 with one 60-ton machine. Since that time, its production has been gradually increased. The company is now under the direction of Max Oberforfer, president and general manager.

The second new Beloit paper machine recently installed in this new unit is the major item in the company's latest expansion program. This machine has brought the capacity of the plant up to about 100 tons per day, and has necessitated taking on an additional number of employees. The building which houses this new machine is of reinforced concrete and steel, and in itself alone represents an expenditure of several hundred thousand dollars.

The new Beloit machine was built primarily for lightweight papers, to run at a speed of 1,400 to 1,500 feet per minute on lightweight kraft. It has a wire 75 feet long and 202 inches wide. The fourdrinier part is of the Beloit removable adjustable type.

The machine is arranged with one of the very latest Beloit high speed shakes, suitable for shaking at 700 strokes per minute, which is expected to make the formation as perfect at 1,400 feet with the shake running 700 strokes as in the old-fashioned way of 200 strokes of the shake running 400 feet per minute. The suction boxes are arranged to oscillate under the wire so that the covers will not wear or become grooved or guide the wire.

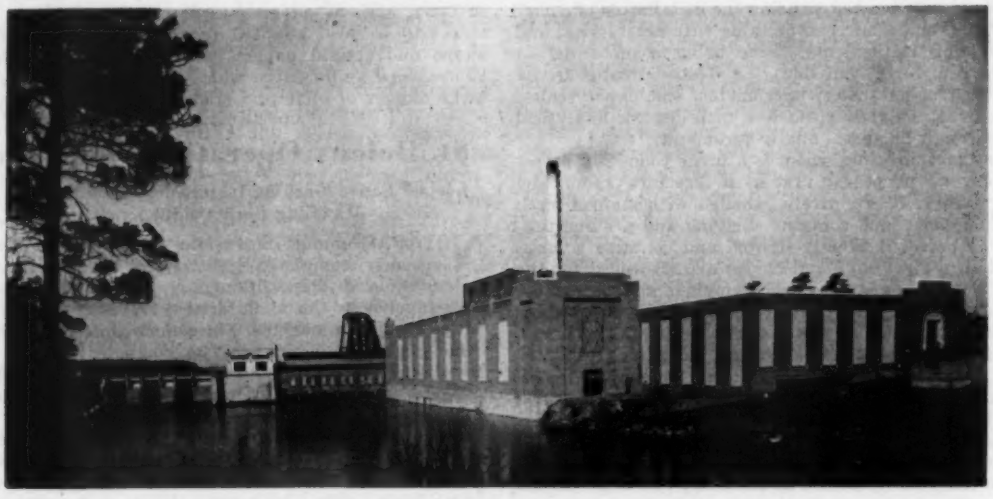
The couch is arranged so that the top felt picks the paper from the wire, carries it over the first press, which is a suction press bottom roll, rubber covered top roll. The paper then passes through a second press when they are running medium or heavier weights, but in running lightweights, the paper is picked off from the top felt by a 36-inch dryer and can be creped on this dryer. There are 18 dryers 60 inches in diameter, supported in anti-friction bearings and driven with a special chain, no gears, as for high speed on very lightweight papers, back lash cannot occur in using chain and tying the dryers all together. The paper is carried through the dryers by an automatic feeding arrangement, delivered to the calenders, or in the case of creped paper, is carried automatically below the calenders into the reel. A stack of calender rolls is arranged so that they can be used when running on a finished sheet or bypassed when running a creped sheet.

An Aldrich improved automatic reel takes the paper automatically and when the roll of paper is finished, automatically delivers it into stands outside of the reel; no handling required by the operator.

A Beloit double drum winder with steel drums is arranged and balanced for very high speed, also a slitting arrangement on this winder to make small counter rolls right on the machine or to make large rolls of paper and in that case there is an automatic device to deliver the rolls onto the floor, table or truck, with no handling by the operator.

The drive is of the Beloit spiral bevel gear type with no loose pulleys, the gears are steel hardened and ground perfectly true. They run in a bath of oil; they are entirely concealed and all shafts, supports, etc. are equipped with anti-friction bearings. The clutches are of the latest type shifted by hydraulic pressure from the front of the machine. The belt shifters are of the improved type handled by electric motors; everything is of the very latest, suitable for high speed, high quality, lightweight or medium weight papers.

The addition of this new machine gives the company greater flexibility and special advantages in the manufacture of specialties.



View of windowless paper mill of Blandin Paper Co., Grand Rapids, Minn.

A Windowless Paper Mill

Blandin Paper Company Operating New Plant Built According to Latest Scientific Principles

ON the banks of the Mississippi river, just below the great water storage basins of Lakes Pokegama, Leech and Winnibigoshish, the first plant to be served by water power from these reservoirs, stands the new windowless newsprint mill of the Blandin Paper Company at Grand Rapids, Minn. It is believed to be the first plant built embodying these unique architectural plans. The new mill has very recently been completed and put into operation.

The original mill was designed 30 years ago and was purchased in 1916 by the Blandin Paper Company. When the necessity arose for increasing the output of the mill, C. K. Blandin, president of the company and for many years a newspaper publisher, saw an opportunity to construct a plant following scientific principles which would keep the manufacture of their product under perfect control at all times and thus meet the exacting requirements for press room operation and furnish the public with a newspaper of much finer quality than heretofore produced. With this in view, the Jacobson Engineering Company, Minneapolis, Minn., in collaboration with the company's plant engineers and the James Leck Company, contractors, Minneapolis, designed and constructed a windowless paper mill.

In the usual type of building, the large part of radiation loss and infiltration of air from the outside is through the windows. A windowless type of building eliminates to a large extent these losses, and permits to a higher degree the use of scientific control of heating, ventilating and lighting of the buildings. These three features influence to a considerable extent the control of the product.

The new structures practically surround the former plant. All of the buildings are of structural steel, reinforced concrete and brick construction, with insulated roofs. The machine room which houses the new paper machine is 52 feet wide by 320 feet long by 47 feet high—two stories. The finishing room and shipping building are 118 feet wide by 129 feet long by 37 feet high—three stories. Loading of cars is performed inside of the building.

Heating and Ventilating

Artificial ventilation requires proper means for admitting and exhausting air. In this a paper mill is well suited in that huge volumes of air must be supplied and exhausted at the paper machine to carry off the vapor given up in the drying process. Unless the air supply is controlled and introduced by mechanical means, it will enter through openings such as windows and doors, causing drafts, discomfort and detriment to the product. Exclusion of promiscuous and dust-laden drafts aid in attaining the high quality of working conditions and product so eagerly sought in this plant.

The novel design of the new mill, with no windows in the machine room, machine room basement or finishing building, makes it necessary that the heating and ventilating system function during the summer months as well as during the winter heating months. With no provision for air from open windows in hot weather, it is as essential to provide proper ventilation for summer as it is for cold weather. In designing the system, the capacity and exhaust requirements of the new No. 3 machine were taken into consideration and the equipment amply provides for handling a supply of air from outdoors equivalent to the amount of air exhausted with the vapor from the paper machine.

The supply air is conveyed through Briner waste heat economizers and heated to the temperature at which it is supplied to the plant. The air from the economizers is supplied through the various fan units and duct systems to the roof of the No. 3 machine room, and to the floors of the finishing building. Air is also supplied to the wet and dry ends of the present machine room.

The felt drying system represents the best modern construction, with a total of 30,000 c.f.m. being blown at high pressure across the width of the felts at various important points. The felt drying air is taken from the basement, but an equivalent volume is discharged into the basement at the wet and dry ends. The movement of warm, dry air from the ends of the basement to the felt drying system results in an exceptionally dry basement with a minimum of condensation on cold water lines and a dry floor.

The Briner economizers installed on this machine recover an average of 10,150 pounds of steam per hour in the coldest weather, which is equivalent to an average of 303 b. hp. The saving of steam at 20 deg. below zero would be 13,400 lbs. per hour, or the equivalent of 399 b. hp.

The machine is hooded with a Ross Steel and Transite Hood of removable panel construction. The hood has wide,

deep overhang, which provides ample gathering space for the vapor and free working space around the machine.

A windowless plant is not dependent upon caprices of the weather for adequate lighting. The Blandin company's new plant is always supplied with just the proper degree of illumination. This is furnished by means of an ultra-violet light called the Uviol tube, together with Cooper-Hewitt lamps. These were installed by the General Electric Vapor Lamp Company, of Chicago.

The New Machine

The new paper machine is one of Beloit Iron Works' most modern type, arranged to operate at 1,500 feet per minute, embodying all of the latest improvements in paper machine design. The wire part is suitable for a wire 156 inches wide by 100 feet long and is of the Beloit patented type, removable as a unit from breast roll to and including the guide roll, table rolls, wire rolls, savealls, and suction boxes.

The fourdrinier part is equipped with the new Beloit high speed universal super shake, a recent development permitting the fourdrinier part to be shaken by several different arrangements. This shake permits the manufacture of high grade newsprint at exceptionally fast speeds, with formation equal to the same grade of paper at less than one-half the speed. In addition to being able to control the intensity and length of stroke of the shake while running, the operator can arrange for a parallel shake or a tapered shake from the breast roll toward the couch roll, or in a reverse direction, also the breast roll can be shaken or remain stationary according to condition. It has been proven that the shake is the most effective by being intensified at the point on the wire where the sheet is in the process of formation and this point varies with the different speeds, therefore this new arrangement will permit the operator to shake the fourdrinier part in the proper manner for the various speeds of paper to obtain the maximum result.

In connection with the removable fourdrinier feature, the Blandin machine is provided with a new method of handling the breast roll. Heretofore when removing the fourdrinier part to install a new wire, it has been necessary to remove the first three or four table rolls next to the breast roll, placing them on top of the adjacent table rolls to make room for the breast roll to be transferred from its operating position to the fourdrinier part, which is removed. This modern fourdrinier, however, is equipped with a recently perfected device whereby the breast roll can be transferred from its operating position to down and under the main fourdrinier part by means of a pair of arms which remain in position for this purpose. It is only necessary to loosen the nuts on hinged bearing housing caps, swing the bolts out of the way which allows the caps to swing out of place, and then by operating a handle on the worm gear reduction unit, the breast roll is transferred to the main fourdrinier part without removing any table rolls or disturbing any operating parts of the fourdrinier. This is a much safer and more convenient arrangement for transferring the breast roll, and there is no danger of getting an uneven stretch to the wire when changing the breast roll back into position.

All of the wire rolls, table rolls, breast roll, and Beloit patented suction couch roll are equipped with anti-friction bearings. The suction couch roll is directly driven and is equipped with a cantilever device on the rear journal which supports the roll in an overhung position when changing wire, thus eliminating the need of a crane.

The press section is equipped with a Beloit suction first press and a Beloit suction second press and a pair of smoothing rolls. The development of the Beloit suction presses has brought about a very economical change in the usual press arrangement, for it has been proven that with two Beloit suction press rolls, the third press is not necessary and therefore has been eliminated.

The dryers are mounted in anti-friction bearings and are lubricated by means of a continuous oiling and filtering system. Instead of the usual dryer gears, the dryers are driven by means of Duplex Silent Chain Drive which is totally enclosed and operates in a bath of oil, which arrangement permits the back side of the machine to be as open and free from obstruction as the front side which assists in air circulation and also makes it possible to remove the broke from the back side and affords absolute safety to the operator. This chain drive is without vibration and is absolutely noiseless in operation. The usual back lash found in the gear drive is completely eliminated.

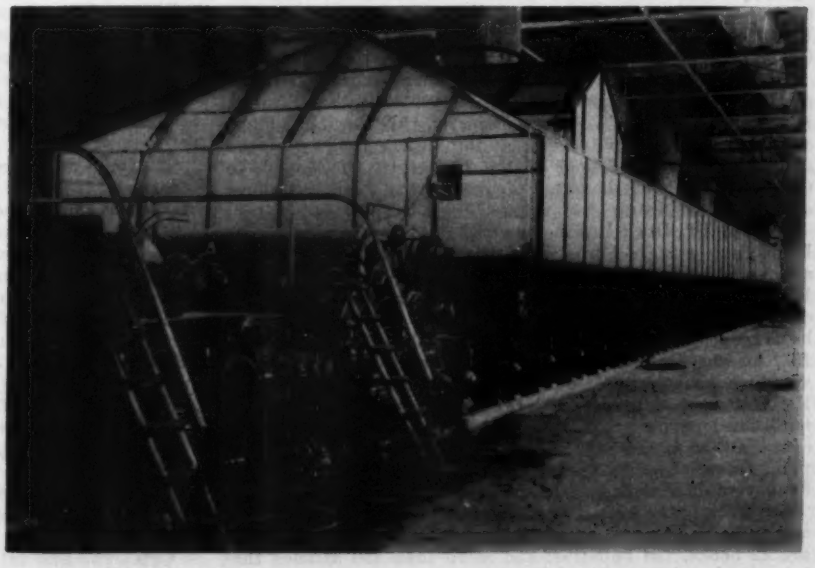
The steam joints on the dryers are the Beloit patented balanced oilless type which require no lubrication and consume no power, regardless of the amount of pressure carried in the dryers. The dryers are provided with a special water removing apparatus which makes it possible to remove all the water from the inside of the dryers at high speed with very little differential in steam pressure.

The eight roll stack of calenders is of the latest improved type and equipped with motor operated lift for raising or lowering the rolls as desired. The calender rolls are provided with Warren doctors and are mounted in new designed collar oiling bearings having Timken end thrust feature. These bearings are connected to the continuous oiling and filtering system which serves the dryer bearings.

The reel is of the improved Aldrich high speed type with the large drum and steel paper reeling spools mounted in anti-friction bearings. The finished roll of paper is automatically discharged into stands and then placed in the water cooled unwinding stands. The Beloit patented unloading type heavy drum winder is used.

Each section of the paper machine is driven by a Beloit improved type hypoid spiral bevel gear drive. The gears are totally enclosed and run in oil. The teeth of these gears are hardened steel. All of the bearings on these drives are of the anti-friction type and arranged for positive lubrication. The friction clutches are of the improved magnetic type controlled from the front side of the machine. The belt shifters for the drive units are operated by means of small motors controlled from the front side of the machine by means of push buttons, eliminating the necessity of the operator going around to the back side of the machine when changing draws. The complete lineshaft is mounted in anti-friction bearings.

Warehouse property of the Barrett Co., Ltd., Montreal, tar products manufacturers, was razed last month.



View of new Beloit fourdrinier paper machine in mill of Blandin Paper Co.

Soda and Sulphate Pulp—480,000 Tons Per Year

Chemical Recovery Handled by Modern Wagner Units

OUTSTANDING developments have been made in the last few years in the pulp and paper industry. Most of these have been due to the application of science as embodied in engineering and chemistry.

Undoubtedly one of the most vital developments in the pulp and paper industry is the Wagner Furnace, making available to the pulp mill a method of recovering chemicals and heat from the sulphate or kraft and the soda process, and opening a way to eliminate stream polution, with recovering of heat values in the sulphite process.

This furnace is a vertical, stationery steel structure with a soap-stone or other refractory lining, having a roof formed of boiler tubes and connected to a water-tube boiler, with induced draft fan and scrubber, or other device for removing the small amount of chemical carried out by the gases.

The unit is almost identical in design for soda and sulphate, displacing in the soda process the rotary and fire pot, the ash conveying system and leachers, and in the sulphate process, the disc evaporators, rotaries and smelters. Its function is to burn the volatiles and fixed carbons, securing absolute combustion, returning the chemicals for reuse in the most available form; doing, in an efficient manner and without extra fuel, what is so poorly done by the rotary systems and eliminating wastes, labor, dirt, smoke and odors.

The advantages offered by the furnace were so quickly recognized by leading pulp mills that installations were made in rapid succession. In some sections of the country, it has been found that the Ross-Wagner furnaces have completely paid for themselves in one year's operation and in any section of the country the installation of this improved recovery system is completely justified.

Ross engineers offer the following method of computing the value of steam which would be generated from waste heat by the Ross-Wagner system in your mill; multiply your present steam per 1,000 lb. by ten, and the result will be steam value per ton of pulp.

Ross-Wagner furnaces are built, sold and serviced by the J. O. Ross Engineering Corporation. An attractive and illustrated catalogue fully describing this modern recovery system will be sent to interested executives.

Dr. Illick with College of Forestry

Dr. Joseph S. Illick, former State Forester of Pennsylvania, was appointed head of the Department of Forest Management of the New York State College of Forestry at Syracuse University by recent action of the Board of Trustees of the College.

Dr. Illick is a native of Easton, Pennsylvania and was graduated from Lafayette College in 1907 and the Biltmore Forest School in 1911. After completing his regular college courses he did graduate work at the University of Chicago and at the Forest School of the University of Munich in Germany. He holds honorary degrees from Juniata College and his Alma Mater—Lafayette College.

In 1907 Dr. Illick became a member of the faculty of the Pennsylvania State Forest School at Mont Alto for 12 years and served as Acting Director of the School during 1918-1919. In 1919 he was appointed Chief of the Bureau of Silviculture in the Pennsylvania Department of Forestry. Later he served as Director of Forest Research and from 1927 to 1931 he was State Forester of Pennsylvania. Among the outstanding achievements during his administration as State Forester were a greatly enlarged and coordinated road and trail development program on the State Forests, an addition of more than 400,000 acres to the State Forests at an average purchase price of $2.88 per acre, and the creation of the Pennsylvania Forest Research Institute at Mont Alto.

Dr. Illick is the author of many publications on forest trees and forestry. Among his contributions to forestry literature are 12 books, ten bulletins, and more than 150 articles that have appeared in local, national and foreign periodicals.

In 1926 Dr. Illick was an official delegate to the World Forestry Congress in Rome, Italy. After the Congress he made an extensive study tour of 12 European countries, including practically all countries with important forestry organizations from Italy to Lapland. In the study of forest conditions in the latter country he traveled more than 150 miles north of the Arctic Circle.

On his trips abroad Dr. Illick took several thousand photos featuring not only forest conditions, silvicultural problems and practices, but especially the relation of forests to human welfare. It is generally conceded that his collection of European forestry photos is among the best in the country and will be used in connection with the revised and enlarged courses in Forest Management that will be given at the New York State College of Forestry. Dr. Illick has also made a number of extended forestry trips through Canada, the Inland Empire, and the National Forests of the Rocky Mountains and the Pacific Coast.

A New Portable Pipe Machine

A new portable pipe cutting and threading machine, known as the Beaver Model A, has been developed and announced by The Beaver Company, Warren, O.

The Beaver Model A is an exceptionally simple, strong and convenient machine. It will cut, thread and ream ½ to 2-inch pipe-steel, wrought iron, brass or cast iron.

Three opening die heads are supplied (½ by ¾-inch; 1 by 1¼-inch, and 1½ by 2-inch). The dies are adjustable. It is not necessary to back off over finished threads—a feature which insures great economy in operating time and die replacement.

The machine has a ½ hp. universal motor, reversible at the switch. The motor is connected by means of a flexible coupling and can be operated from any 110-volt light line, either A.C. or D.C.

The oil pump is mounted on the outside for convenience in repacking, cleaning, etc. All main housings are of aluminum—thereby affecting a saving of 125 pounds in weight.

The die head can be tilted back out of the way (not necessary to take it off) when cutting and threading with an extension shaft and geared die stocks or pipe cutters.

Hermann Mfg. Co. Makes Pulp Testing Apparatus

The Technical Section of the Paper Maker's Association of Great Britain and Ireland have recently granted the Hermann Manufacturing Company of Lancaster, Ohio, a license to manufacture and sell the British Standard Pulp Testing Apparatus in this country.

The equipment includes a pulp disintegrator, sheet machine, which forms at the same time and excellent freeness tester, hydraulic press and pump, and includes a template for centering the sheets and plates in the press, mirror polished stainless steel discs and rings for drying the test sheets and templates for cutting the sheets to size for basis weight determinations.

The apparatus and method has received very favorable comments from the Canadian Pulp and Paper Association and other official bodies and over 30 sets of equipment have been delivered to users in more than a dozen countries all over the world, including the Scandinavian Countries.

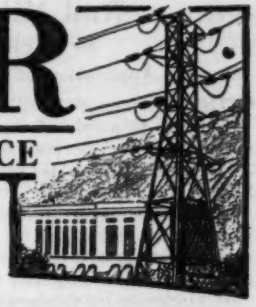
The equipment enables excellent test sheets to be formed from any class of pulp or paper or board stocks, beaten or unbeaten, and the freeness measuring feature of the sheet forming machine has shown a marked superiority over any other equivalent apparatus for determining the actual working freeness of pulps when run on the paper or board machines as distinct from the laboratory "Freeness" figures, which are so often misleading when applied to practice.

Mr. James d'A Clark, development engineer of The Mead Corporation, Chillicothe, Ohio, was directly responsible for this arrangement. Mr. Clark came to The Mead Corporation from England, where he took an active interest in developing the apparatus.

Catalogue and information will be furnished upon request on any or all parts of the equipment.

POWER

GENERATION - UTILIZATION - MAINTENANCE



By W. S. JOULE

This section turns the searchlight upon power and its allied problems. It shows up big possibilities to save. Opportunities to improve conditions, methods, apparatus will be discovered. Worth while practices suggest new ideas and wider usages of equipment.

Determining Installation Resistance by Voltmeter

BEFORE putting into service any equipment which has been out of service any length of time or any new equipment going into operation for the first time, it is good practice to determine insulation resistance before applying full voltage. In the case of high voltage circuits and equipment, dielectric strength of the insulation is of first importance, whereas in the case of lower voltage circuits the resistance of the insulation is the major consideration. In many cases, equipment needed in the worst way is kept out of service because the surface appears to be moist, due perhaps to condensation. The moisture has not seeped through the insulation, however, and the delay would be unnecessary were the proper steps taken to determine the actual resistance of the insulation.

The so-called megger is probably the best known type of equipment for determining insulation resistance, because this method can be applied so easily and quickly. A megger is often unavailable, however, and some other means must be found to measure the resistance. For this purpose the voltmeter method is satisfactory.

The voltmeter method consists of applying a direct current of steady value through a known resistance, across the insulation, the resistance of which is to be measured. A direct-current supply which is constant must be used. In paper pulp mills, this can usually be obtained by running leads from the exciter circuit or operating an exciter for this purpose. In this way the voltage can be controlled at any constant and steady value. Ordinarily a voltage of 220 or 250 volts is desirable. The resistance of the voltmeter must also be known.

The most convenient hook-up is to employ a two-throw single-pole switch so connected that when in one position the voltmeter is connected directly across the direct-current supply circuit and when thrown in the other position, the voltmeter is in series with the insulation, the resistance of which is to be measured. Because of its high resistance, it is usually best in making the insulation test, to have the voltmeter connected between the line or supply circuit and the resistance which is to be measured. For example, in the case of a direct-current motor or possibly in determining the insulation resistance of a 3-phase motor, the positive terminal of the voltmeter will be connected to the positive side of the direct-current circuit and the negative terminal of the voltmeter will be connected to the switch, then to the winding of the motor. The frame, stator (depending upon the type of motor) will then be connected to the ground side of the direct-current circuit.

The insulation resistance is given by this simple formula:

$$R_1 = R\left(\frac{E}{E_1} - 1\right)$$

E = voltage of direct-current testing circuit.
E_1 = reading of voltmeter in series with insulation.
R = resistance of voltmeter.
R_1 = insulation resistance, in ohms.

It is a good policy to measure the insulation of equipment when it is new, when first placed in service and when the equipment is known to be dry and in first-class condition. It is also advisable to obtain from the manufacturer, whenever possible, a statement as to the insulation resistance. In this way, deterioration, dampness and many other troubles may be quickly brought to light.

When insulation is wet, the reading obtained from the above formula may be zero. The American Institute of Electrical Engineers has developed a formula giving the minimum insulation resistance at operating temperature as follows:

$$\text{Megohms} = \frac{\text{Terminal volts}}{\text{Kv. a. rating} + 1000}$$

However, the values obtained in this way are somewhat low and it is usually safer to endeavor to obtain considerably higher values than those given by the formula; when the insulation resistance obtained by tests is approximately the same as that given by the A.I.E. formula, it is generally advisable to continue the drying-out process. In drying out, because of the fire hazards and also the possibility of injuring the windings, it is advisable to keep a log showing the various temperatures, the current used and the insulation resistance from time to time. In this way overheating can be prevented and a good index obtained as to whether further drying out offers any promise of higher insulation resistance.

Special Alloys Increase Life of Waterwheel Parts

MANY of the large central station companies operating hydro-electric plants have been experimenting for years, in conjunction with water turbine manufacturers, with ways of of reducing the erosion and attrition due to the passage of the water and debris through the prime movers. This matter was gone into quite thoroughly during the recent meeting of the hydraulic power committee of the Pacific Coast Electrical Association held recently in Fresno, Calif.

It was brought out in a paper by J. M. Gaylord upon "Special Alloys for Hydraulic Equipment" that operating experience has demonstrated that the application of hard-basic metals in turbine parts subjected to high pressure is economically worth while. Practically all the hydraulic units along the Pacific Coast are high-head plants using relatively small amounts of water but operating at extremely high heads. In consequence, the needles and throat rings of the turbines are subjected to quite rapid attrition and erosion. One plant has experimented with steel, bronze and steel treated with stellite so as to create a hard facing. Steel needles and throat rings at this plant lasted only three months, at which time it became necessary to replace them. Experiments carried out with bronze rings proved that bronze lasted no longer than steel. When a stellite ring and needle were installed, it was found possible to operate for two years without any attention whatsoever, at the end of which time both ring and needle were found to be in first class condition. This is an increase, of course, of eight times the former life, when using steel or bronze.

Bronze had formerly been used in this plant, giving a life of less than three months. At this plant, experiments have been carried on with stoodite, nitralloy, durite and chromium. It was found that stoodite had apparently the same wearing qualities as stellite. Nitralloy needles and throat rings and also durite needles are giving good service while chromium plating shows a tendency for the plating to peel off. However, the peeling of the chromium is believed to be due to improper plating in the first place.

Rod Mill Beater Roll

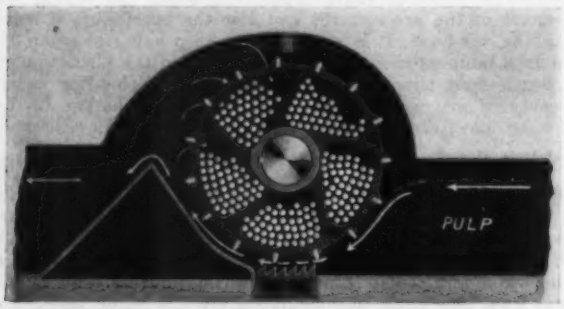
By ALFRED M. THOMSEN

Notes on Application of the Rexman Rod Mill to a Beater

THE Rexman rod mill beater roll is a recent application of the principle of the rod mill to paper making. A description of the Rexman rod mill, which is manufactured by Joshua Hendy Iron Works, San Francisco, appeared on page 378 of the June, 1931 issue of THE PAPER INDUSTRY. The roll consists of a number of compartments symmetrically grouped around a central shaft. Each compartment is filled approximately 2/3 full of rods and being very nearly balanced the power required to rotate it is small.

It suggests in appearance the ordinary beater roll, being of approximately the same dimensions, but its action is entirely different. With the usual beater roll the reduction of the fiber to proper condition is accomplished between the fly bars of the roll and the bed plate. With the Rexman rod mill beater, there is no such action; instead, the reduction of the pulp is accomplished solely by the rods. The machine is so constructed that it feeds and discharges continuously across its entire width and the hundreds of lines of contact between the rods are always evenly loaded with pulp. The flybars attached to the periphery of the roll perform no beating function but serve to circulate the pulp over the back fall and also to deliver a continuous stream of pulp to the top of the roll thus keeping the voids between the rods evenly filled with pulp.

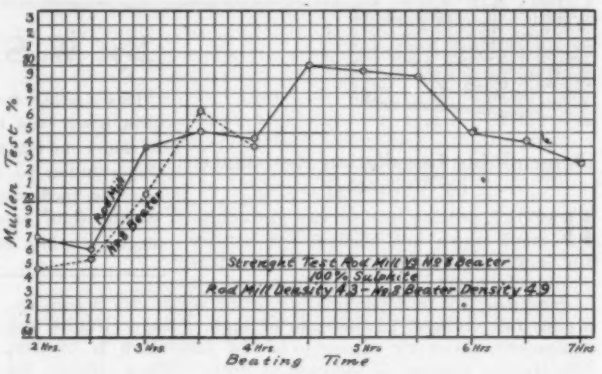
Although there is no beating action proper performed by the fly bars they constitute in conjunction with a shredder bed plate an exceedingly efficient breaker or disintegrator



Diagrammatic side view elevation of Rexman Rod Mill beater roll in operation

for lap stock. In furnishing a beater with 1650 pounds of hydraulically pressed and partially dried unbleached sulphite (equivalent to 1100 pounds air dry), the stock was sufficiently disintegrated in 20 minutes to pass freely between the rods, after which the reduction of the pulp was very rapid. As might be inferred from this data, the roll is neither raised nor lowered but remains permanently in position with a clearance of one-quarter inch between fly bars and bed plate.

The above data was secured from a Rexman rod mill beater roll, 60-inch O. D. of fly bars x 60-inch face, mounted in a Jones tub. It was loaded with five tons of rods, and at 35 revolutions per minute had the same capacity as the regular beater roll on stock of the same consistency but with notably



better circulation. For the purpose of comparison, hand sheets were taken at intervals from an adjacent beater equipped with the regular roll and the results plotted. The demands of the paper machine made it necessary to dump the beaters every two hours but in order to obtain additional information the period was prolonged as indicated in the diagram. It will be seen that at the customary dumping period—i.e., two hours, the rod mill product was several points in advance of the ordinary beater. It should also be noted that the rise to maximum strength is somewhat more rapid in the ordinary beater and then breaks badly, while in the case of the rod mill the reverse is true. In all tests, the pulp from the rod mill was much freer than that from the ordinary beater roll. It was also noticed that the finished sheet containing stock beaten in the rod mill and stock from the ordinary beater in the proportion of one of the former to two of the latter, showed better formation and a higher pop test than a similar sheet containing no rod mill beaten stock.

Photographs Nos. 1 and 2, taken at the customary dumping period of two hours, show plainly the different treatment given the fiber by the two machines. The absence of broken fiber and "fuzz" in the rod mill product is particularly noticeable. Photograph No. 3, taken from the rod mill tub when the four hour period had been reached shows this "fuzz" just beginning to appear. The reason for the freeness of the stock, the increased strength, and the better formation of the composite sheet will be readily understood after an examination of these photographs.

Most noticeable in the performance of the rod mill is its low power consumption. Taken over a considerable period,

Fig. 1—Rod Mill; two hours beating

Fig. 2—Beater; two hours beating

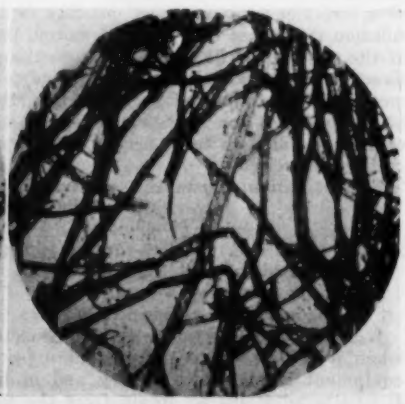


Fig. 3—Rod Mill; four hours beating

this averaged but 18 horsepower, while the adjacent beater with the regular roll required from 68 to 70 horsepower to perform the same operation. This shows a saving of approximately 50 horsepower in favor of the rod mill beater roll. The excellent performance from the rod mill as a shredder of lap stock will also eliminate some labor, as it is unnecessary to open up laps to the extent required by the ordinary beater. Finally, it requires less attention and of course it cannot damage the stock to the extent possible with the ordinary beater if carelessly used. The use of the pole to correct such matters was unknown with the rod mill installation.

In changing over from the ordinary roll to the rod mill roll, no alteration was required; one roll was simply removed from the tub and another substituted, all else remaining unchanged. Where it would be advantageous to increase beating capacity, a considerably larger roll could be installed in the same tub with little change save to the hood to accommodate the larger roll. Wear and tear with the rod mill will apparently be a small factor. At the end of nine months operation no appreciable wear could be detected.

Paper Twine Slitter Performs Triple Duty

Manufacturers of fiber furniture and paper twine will be interested in the slitter here illustrated.

As is well-known, the fiber used in much of the so called fiber furniture is nothing more than twisted kraft strips. A piece of furniture made with this product is cheaper and just as useful as furniture made of genuine fiber.

Manufacturers of paper twine, as used in fiber furniture, have found that the twisting of the strip is more readily accomplished when the strips are well moistened before twisting. Heretofore, two methods of moistening strip were in

general use. One method was to have individual moisteners attached to the twisting machine and the other was to soak the coils of strip in a barrel full of water before placing the coils on the twisting machine. By either of the above methods the moisture was unevenly distributed, and the results in the twisting process far from satisfactory.

As a consequence, the Cameron Machine Company attacked this problem and combined the moistening with the slitting and coil winding operation. The machine as shown here moistens the entire web as it comes from the mill roll and then immediately slits it into the widths desired, winding up the separate coils at the same time.

The result is a machine which performs three operations in one, moistening, slitting and winding, making possible an increase of production and, of course, lower production costs.

Standard Oil (Indiana) Stock Owned by Many

Figures strikingly illustrating the way in which ownership of great American corporations is passing from the hands of the few into the hands of the many were recently released by the Standard Oil Company of Indiana.

When this company became a separate organization in 1911 it had 6,078 stockholders, nearly all of whom were residents of New York and a few other financial centers. Now it is owned by 95,136 stockholders scattered through every state and territory in the United States and several foreign countries.

The largest amount of stock held by any one stockholder is only 4.07 per cent of the total and the average of 179 shares per stockholder only .001 per cent of the total.

Philip Tell Dodge

Philip Tell Dodge, financier and industrialist, who for 11 years was president and chairman of the board of directors of the International Paper Company, and also president of the Mergenthaler Linotype Company for 37 years, and long a leading figure in the paper manufacturing industry of the United States, died on August 9 at his summer home in Rye, N. Y. He was 80 years old, and had been suffering from an attach of bronchial pneumonia. A private funeral service was held at the home on August 11, and burial was in Schenectady, N. Y., where Mr. Dodge lived in his youth.

Mr. Dodge was born in Fond du Lac, Wis., on July 11, 1851, of a family which had resided in Schenectady for many years. His father, William Castle Dodge, had gone west a few years before to publish a newspaper in Minnesota. The plant subsequently burned and the family returned to Schenectady, where Mr. Dodge obtained his first job, at the age of 10, in a machine shop.

He studied mechanical drawing at night and was promoted to the designing department of the shop. At this time, however, his family moved to Washington, where the elder Dodge became connected with a patent attorney's office. The young man entered the law school of old Columbia College, now George Washington University, and was graduated as a patent attorney at the age of 22. He was afterward active as a patent lawyer for 25 years, during which time he became interested in many inventions, particularly those relating to the printed word.

In his career as inventor, lawyer and business executive, Mr. Dodge possessed the faculty of bringing success to every enterprise with which he was connected. After guiding the early typesetting machine to the basis of profitable industry, he directed his efforts toward the production of paper. At the time of his election to the presidency of the International Paper Company, the organization was in financial straits and had not paid dividends on stock for several years. Under the direction of Mr. Dodge, the manufacturing plants of the company were greatly improved and a new mill was constructed at Three Rivers, Que., which at the time was the largest in the world.

Mr. Dodge was also prominently identified with many other enterprises. He was one of the early presidents of the Royal Typewriter Company and also headed the Columbia Phonograph Company for several years. He was a director of the American Paper Exports, the Continental Paper Bag Company, the St. Maurice Lumber Company, and of several banks and trust companies.

A widow, Mrs. Lilias Sutherland Dodge, and a son and daughter by a previous marriage survive. The son, Norman Dodge, succeeded his father as president of the linotype company four years ago.

A New Industrial Operation Recorder

The design of a new instrument known as the Amthor Operation Recorder, has been announced by the manufacturer, Amthor Testing Instrument Co., Inc., Brooklyn, N. Y. As its name implies, the instrument records any operation which is a function of or depends on the rate of production or speed of practicallly every type of moving machinery.

The importance that instruments that record pressure, vacuum, temperature, etc. have become to process control production and operating efficiency in every industry, is estimated for this new operating recorder which gives the same type of detailed record covering the entire working day's operation of the machine on which it is installed.

It can be installed on any machinery, such as dryers, calenders, paper machines, rotary presses, etc., to check such operations as the paper weight in ratio to the speed against the amount of pulp being admitted to the stuff box, proper

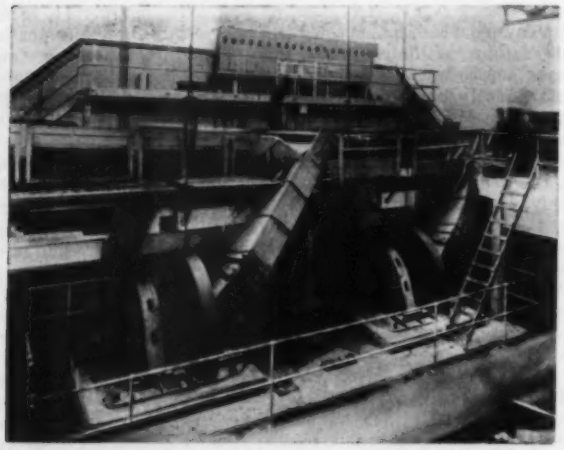
speed for given grades of stock; record rate of production of paper passing through a machine; detect any irregularities in operation, such as correctness of the over-speed safety trip on turbines, the rate and regularity of coal feed on stokers, etc., on blower engines, circulating pumps, reversing machinery, etc.

Direct-Connected Chipper Drive

By S. P. BORDEAU
Electric Machinery Mfg. Co.

TWO synchronous motor driven chippers were recently installed at the new mill of the Maine Seaboard Paper Company, Bucksport, Maine. The synchronous motors are direct-connected to the chipper, the rotor of the motor being mounted on the chipper shaft.

The improvement in operation and increase in tonnage from these new chippers over the previous belt driven ma-



chines of the same size and the same nominal speed, has exceeded expectations. It is estimated that 25 per cent more tonnage is obtained from the new installation.

The increased output of the chipper for the same amount of power is attributable to: (1) high power conversion efficiency of the synchronous motors; (2) absolutely constant speed which is maintained by the synchronous motor regardless of power peaks or load variations; (3) the fact that the new chippers are equipped with anti-friction bearings which improve considerably their operation.

The photograph above shows the installation. Motors are 225 hp. 257 r.p.m. operating at unity power factor. They are started and protected by the field-frequency system of synchronous motor control. The use of direct-connected synchronous motors offers a real opportunity for improving the operation, increasing the tonnage, and simplifying the chipper drive over the older methods in use.

Easton Car Buys Lakewood Industrial Division

The Lakewood Engineering Company has sold the Industrial Division of its business to the Easton Car and Construction Company, Easton, Pa. Hereafter the complete line of Lakewood tier trucks, electric trucks, trailers, skids and industrial cars will be manufactured at Easton, Pa.

This consolidation rounds out the Easton line of cars and trucks and makes it possible for the company to supply practically every industrial car or truck requirement. Easton facilities and organization also assures to the present users of Lakewood equipment a continuation of the prompt and efficient service to which they have been accustomed.

The Durabilt Steel Locker Co., of Aurora, Ill., has announced to the trade and its representatives a change in its official personnel. The new officers are: E. D. Kaser, president and general manager; V. C. Kaser, vice-pres.; H. S. Hatch, treas. and sales manager, and W. H. Graham, secretary.

New Catalogues and Publications

Cincinnati Rubber Mfg. Co., Cincinnati, Ohio—"Flexicord" a new endless belt, is the subject of a folder just issued. This belt, as its name implies, is built entirely of cord plies, frictioned with a high grade of rubber compound. It is really endless, there being no splice or joint. Flexicord is the result of a long period of experimentation to develop a belt with the strength for the hardest service. The belts are not stocked. Each is individually built to exact size.

Farrel-Birmingham Co., Ansonia, Conn.—"Assuring Production with Precision in Roll Grinding" is the subject of a new booklet just published by this company. This booklet explains the necessity for close accuracy and fine finish in rolls used for the manufacture of various products such as metal, paper, rubber, etc. The mechanical features responsible for the accuracy and high output of finished rolls are also described. Several types of Farrel roll grinders are illustrated, each designed for a specific purpose. Each type embodies certain principles of design which promote the efficiency of the machine for the particular work for which it is intended.

General Refractories Co., Philadelphia—Grefco high temperature mortars and G. R. Co. plastic chrome ore are featured in a new booklet just received. Grefco mortar is neutral in its chemical characteristics and, therefore, highly resistant to the attack of acid or basic slags. It has a fusion point of over 3,400 deg. F. Plastic chrome ore has the same resistant qualities and is recommended for forging furnaces, reheating furnaces, and wire or bar furnaces, particularly where there has been difficulty with the slagging and cutting out of sand or fire clay brick bottoms or where basic brick installed to resist basic slags are now spalling excessively. Copies on request.

Goulds Pumps, Inc., Seneca Falls, N. Y.—A new bulletin covers this company's Figure 3105 Paper Stock Pump, which is designed primarily for pumping paper stock, but equally adapted to handling thick liquors, sewage and similar materials. The features of construction are clearly explained and there are a number of curves showing the application of this pump to the paper and pulp industry. The company has also issued in convenient form reprint of a paper presented by William P. Gargan of its engineering department at the spring meeting of the Northern New York Division of the American Pulp and Paper Mill Superintendent's Association in Syracuse, N. Y., on the subject "Pumping of High Density Stock and Other Liquids."

Grindle Fuel Equipment Co., Harvey, Ill.—This company (subsidiary of the Whiting Corporation) will send upon request Bulletin No. 12 descriptive of The Whiting Table Roller Pulverizer. The manufacturer claims this pulverizer to have many advantages which have resulted from a thorough study of the subject of pulverization. Typical installations are shown and a cross-section view of the pulverizer, also list of some of the materials handled by this pulverizer.

International-Stacey Corp., Columbus, O.—The Roots-Connersville-Wilbraham Division of this company, located at Connersville, Ind., has just issued four new bulletins covering its line of standard and heavy duty blowers and gas pumps. These bulletins supersede all former ones on these products issued separately in the past by the P. H. & F. M. Roots Co., The Connersville, Blower Co., Inc., both of Connersville, Ind., and the Wilbraham-Green Blower Co., Pottstown, Pa.

The Master Builders Co., Cleveland, Ohio—Metalicron industrial floors is the subject discussed in a recent booklet. Metalicron is a combination of Master Builders Metallic Hardner and Omicron. Metallic Hardner is Metallic Aggregate, particles properly graded in size, free of oil and all other impurities. It replaces brittle sand with tough, ductile metal to resist the wear and tear of heavy traffic. Omicron reduces the solubles in concrete, greatly increasing its strength and its resistance to the attack of acids, alkalies and other corrosive agents. Another leaflet features Mastertex, a waterproof masonry paint, specially designed and perfected by this company for coating concrete, brick, tile, stucco, and other masonry surfaces. It will not peel, flake or brush off, and resists the attacks of the elements and becomes stronger with age. Mastertex is recommended as very suitable for the interior walls of paper mills. Copies on request.

Mine and Smelter Supply Co., Denver, Colo.—One of the first publication to be issued by this company in connection with its recently organized Paper Mill Division is an attractive booklet especially prepared for the application of Marcy Rod Mills to the paper and pulp industry. This little booklet contains much valuable information with pictures of various installations.

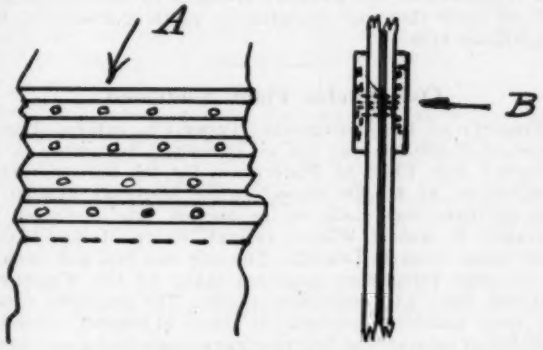
Morse Chain Co., Ithaca, N. Y.—Morse Stock Drives up to 50 hp. are featured in Bulletin 44. Chain cases, sprockets, hunting links, installation and lubrication data are included in this bulletin. Special mention is made of Morse chains for use on paper machines.

Joseph T. Ryerson & Son, Inc., Chicago—"Cold Finished Bars" is the subject of a bulletin just issued by this company, in which a description is given of the wide variety of shafting, screw stock, and open hearth case carburizing steels in use to-day. Everything from standard shafting to special accuracy stock is explained in a non-technical manner, describing what each is used for and why it serves certain purposes to the best advantage. There is much valuable information of a general nature, and a list of standard manufacturing tolerances and S.A.E. specifications of the various round, square, hexagon and flat bars.

Practical Helps for the Mill Man

Dryer Felt Rivet Difficulty Corrected

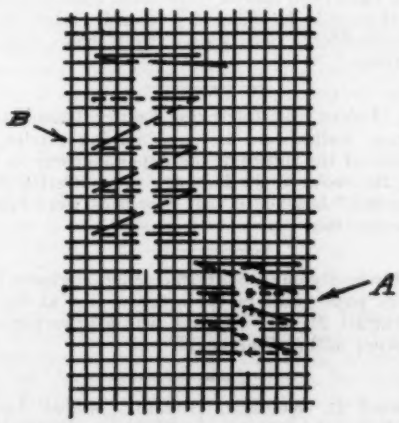
RIVETS are being used for securing laps seams in dryer felts to an increasing degree. There is a tendency for the rivets to pull in the cotton fabric and sometimes for the heads to cut the sheet. Strips of asbestos as shown in the



sketch are used to counteract this difficulty. At (A) is shown a section of the lap seam with the strips of asbestos running across it. At (B) is shown an enlargement of the section of one rivet showing the asbestos on both sides of the seam. The head and the shanks of the rivet sink below the surface of the asbestos and so the head does not mark.

Sewing a Newsprint Wire

THERE is a tendency to take wires off of high speed news machines without sewing them, and in one mill this was being done because the sewings marked the sheet as they crossed the heavy vacuum of the suction roll. One superintendent experimented for himself and the result of his trial proved that sewings could be put in which would run. What this superintendent learned is shown in diagrammatic form in the accompanying sketch. At (B) is given the scheme of a fairly open sewing—the stitches being caught in every third mesh. The improved sewing is shown at (A) where the stitches are caught in every second mesh. The principle of the thing is that an open sewing will not run on a heavy vacuum suction couch. It might be necessary to put a stitch in every mesh in order to get them close enough.

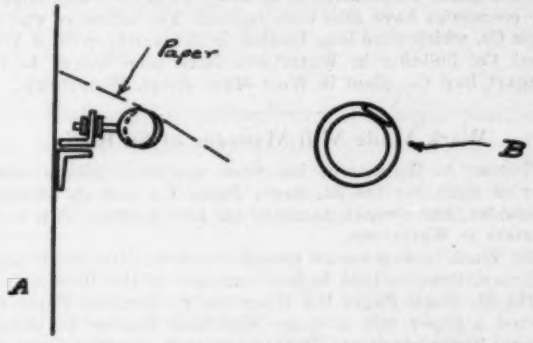


Closing a Cylinder Facing Seam

SEVERAL superintendents believe that the stitch shown in the accompanying sketch is an improvement over the simple method usually employed in closing a cylinder facing seam. The advantage is that if one stitch breaks, what is practically a half hitch holds the closing wire to the loop of the whipping wire. Without this a whole length of closing wire would be released and a considerable crack opened in the seam

A Stiff Spreader Bar

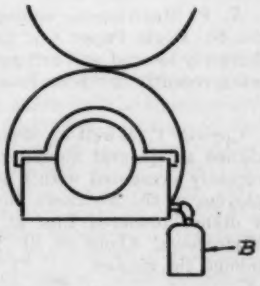
IT is often found difficult to get a sufficiently stiff spreader bar between the dryers and calenders, especially on fast wide new jobs. Bar iron wears out with disconcerting frequency even when it is found stiff enough. The sketch shows a spreader made with an angle iron and a piece of 3-inch extra heavy pipe. (A) shows the calender stack frame, and the angle iron is supported on a bracket on each of the two frames. About every 18 inches, a heavy stud connects the pipe to the angle iron. The crown in the spreader is pro-



duced by lock nuts on these studs. At (B) is shown a section of the pipe, showing a wearing plate placed where the paper crosses the pipe. This is welded in and can be easily replaced, thus obviating the work necessary to put new studs in pipe which would have to be done if it were allowed to wear out.

Simple Oil Reclaimer

PANS to catch oil dripping from bearings often get kicked over and sometimes are so placed as to make it impossible to keep water, stock or dirt out of them. The sketch shows a device to recover oil from a bearing which delivers the oil in a condition making it easiest to reclaim. The bottoms or oil wells of oil cans have nipples fitted into them which match the drain pipes on the bearings. The oiler removes full ones when necessary and the oil is kept off the floor and clean.



General Electric Co., Schenectady, N. Y.—New literature from this company includes bulletins on Arc Welding in Industry, G-E Arc Welders, Plastic Products, General-Purpose Automatic Time Switch, and The G-E Thrustor.

◆ NORTHERN NEW YORK ◆

G. Seymour Knowlton has been elected president of Knowlton Brothers, Inc., of Watertown to succeed his father, the late George W. Knowlton. Mr. Knowlton was formerly treasurer of the concern. The new officers are: G. Seymour Knowlton, president; Willis H. Howes, vice-president; H. E. Harmon, secretary, and J. C. McCormick, treasurer. The directors chosen are: G. Seymour Knowlton, Willis H. Howes, H. E. Harmon, J. C. McCormick and Theodore E. Knowlton.

McMillan Takes Over Management of St. Regis

C. R. McMillan, executive vice-president of the St. Regis Paper Co., has assumed active management of the company's affairs. The former active head of the concern, Ralph B. Maltby, is now in Europe. Mr. Maltby has been in poor health for some time. Definite assumption of active management of the St. Regis Co. by Mr. McMillan is regarded by many in paper industry circles as giving more verity to the rumors which have been in circulation more than a year of the eventual absorption of the Union Bag & Paper Co., into the St. Regis Paper Co. The Niagara Hudson Power Corp., with which the Carlisle interests are also identified, bought all the capital stock of the Union Bag & Paper Co. in June, 1930. Mr. McMillan, who joined the St. Regis organization a few months ago, was formerly connected with the Union Bag & Paper Co.

Rumors that the Taggart Paper companies, at present affiliated with the St. Regis Paper Co. might also be absorbed into the latter corporation so as to effect greater administrative economies have also been current. The offices of the St. Regis Co. which were long located in the Northern New York Trust Co. building in Watertown have been moved to the Taggart Bag Co. plant in West Main street, Watertown.

Wark Made Mill Manager of St. Regis

Thomas A. Wark, who has been appointed general manager of mills for the St. Regis Paper Co. and its affiliated companies, has already assumed his new position with headquarters in Watertown.

Mr. Wark is well-known among Northern New York paper mill men. Prior to 1916 he was manager of the Deferiet mill of the St. Regis Paper Co. When the St. Maurice Paper Co. erected a paper mill at Cape Madeline, Quebec, he became general superintendent. Then when that company was absorbed into the Canada Power & Paper Corp. he continued to manage the Cape Madeline division and later became general superintendent of the company's newsprint mills, having charge of the Laurentide and Belgo divisions too. He left that position to go with the St. Regis Company.

A. P. MacKinnon, manager of the woods department of the St. Regis Paper Co., has resigned. Mr. MacKinnon was formerly located at Carthage. Later he went to Montreal, but more recently has been located in New York.

Corwin T. Jewell of Watertown who a short time ago resigned as general manager of the St. Regis Paper Co. was recently presented with a loving cup by the officials and employees of the Northern New York mills of that company at a dinner tendered him at the Black River Valley club in Watertown. About 60 St. Regis officials and employees attended the dinner.

Two parcels of land owned by the Carthage Pulp & Board Company were bid in for Jefferson county by County Treasurer Burton S. Hayes at a tax sale held in Watertown, Tuesday, August 25. The company is assessed for $161,704 and there are $400,000 of bonds outstanding against it. The tax on one parcel was $5,998.08. The property is in West Carthage and consists of 4¼ acres together with a mill. The tax on the other parcel was $1,137.92, covering water rights on half the flow of the Black River at a 17-foot head under average conditions to produce 279 hp.

Complaints assailing rates on carload shipments of pulpwood from Canadian origins to destinations in New York and Pennsylvania have been dismissed in New York and Pennsylvania by the Interstate Commerce Commission. It was alleged by the Castenea Paper Co. that rates on pulpwood from Canada were prejudicial to traffic to Willsboro, N. Y., Lockhaven and Johnsonburg, Pa., and preferential to the complainant's competitors in Niagara Falls, North Tonawanda, Plattsburg, Ausable Forks, Fort Edward, Hudson Falls, Glens Falls, Corinth, Warrensburg, Mechanicsville, Ticonderoga, Cohoes, Albany, Thompson and Tyrone, N. Y., and Williamsburg, Pa. Evidence produced by the complainant did not show that any prejudice or preference existed, the commission held.

Oswegatchie Plant Auctioned

Property of the Oswegatchie Paper Co., estimated at a value of $3,000,000 was bid in Thursday, September 3, by Attorney Sam Child of Watertown, for the first mortgage bondholders, at $65,300 subject to the mortgage against it. The purchase was made at the auction sale conducted by Attorney E. Robert Wilcox, referee, on the Lewis county court house steps in Lowville. The sale was held pursuant to a mortgage foreclosure judgment taken by the Watertown National Bank as bondholders' trustee. The judgment covering total liabilities amounts to about $1,900,000, including $598,000 of outstanding first mortgage bonds and about $900,000 of second and refunding mortgage bonds. The bank has a lien of about $45,000 for moneys advanced on the property, of which $23,000 was for taxes, $10,000 for insurance and about $11,000 for watchman services and maintenance expenses. Besides these items there are several judgments against the Oswegatchie Co.

It has not yet been determined what will be done with the property. It is likely that there will be a reorganization looking towards operation of the mills which have been idle for more than two years because of lack of a product market.

The offices of the Carthage Power Corp., and the Champion Paper Corp. have been moved from New York City to Watertown. The change in location was recently voted by the controlling stockholders. Both corporations have their properties in Carthage.

Speaking before the Carthage Rotary Club August 26, John Murray, well-known in papermaking circles, said he felt optimistic of the future of the paper industry in Northern New York. He declared the industry was suffering from "under-consumption" but added that new uses were being found for paper every day.

Charles Elwin Stebbins, 67, former chief engineer in Knowlton Brothers paper mill in Watertown, died at his home in that city August 21. Mr. Stebbins was also employed at one time in a paper mill at Piercefield.

Dr. Edward R. Weidlein, Director, Mellon Institute of Industrial Research, Pittsburgh, Pa., has announced that an Industrial Fellowship for research on moistureproofing and greaseproofing paperboards used in cartons and boxes has been established in that institution by the Robert Gair Company, of New York, N. Y. Recent progress in package merchandising has indicated, he pointed out, a growing need for paperboard containers with improved moistureproofing and greaseproofing qualities, and he said that it is the hope of the Robert Gair Company, the donor of the Fellowship, and of Mellon Institute that technically valuable advances will result from the studies which were begun on September 1.

PACIFIC COAST

WASHINGTON

Pacific States May Build Sodium Sulphate Plant

Immediate construction of a sodium sulphate plant in Okanogan county near Monse, Wash., is predicted by substantial reports which will not be confirmed until C. W. Beardmore, of the Pacific States Pulp & Paper Company arrives from an extended stay in New York. It is understood that Industrial Associates, Inc., have been contracted to handle the construction project.

This unit would be allied with the previously mentioned pulp plant for Priest river, Idaho, which the Pacific States Pulp & Paper company plans to start this year. This mill would have an initial capacity of 100-tons kraft pulp and the plant at Monse would also have 100-ton capacity.

F. S. Bell, president of the Weyerhauser Timber Co., whose home is in Winona, Minn., has been in the Pacific northwest on an inspection tour of the company's properties, with special attention to the new pulp mill under construction at Longview. He was accompanied by F. E. Weyerhauser, vice-president of the company and H. H. Irvine, treasurer, both of St. Paul.

The Rainier Pulp & Paper company, Shelton, has awarded contract for a $12,000 warehouse to the Austin company.

Dr. H. K. Benson, director of the chemical engineering department of the University of Washington, Seattle, and secretary of the Pacific Coast section of T.A.P.P.I. during the first year of its organization until he resigned to take leave of absence from his college duties for a year, has now received a patent on a special process for making sulphite pulp from Douglas fir and other similar western woods.

The Columbia Paper Supply company of Wenatchee has been incorporated with a capital of $6,000 by Wm. Taylor Alexander, M. S. Vandewater and Arthur J. Lavell.

A. H. Lundberg, Pacific Coast representative of the G. D. Jenssen Co., Seattle, who has been spending three months abroad, made a study of the Brobeck cooking system for sulphite mills while in Sweden, and is now ready to deal out information to any who may be interested as the Jenssen company will represent the Brobeck cooking system in America.

W. Norman Osborne, formerly with the Grays Harbor Pulp & Paper Co., Hoquiam, is now assistant superintendent of the Puget Sound Pulp & Paper company's plant at Bellingham.

CALIFORNIA

W. G. Hara who until last spring was manager of the stationery department of the Zellerbach Paper company, Los Angeles, but who retired at that time after 29 years of service with the company, has again taken up duties in the paper field. He is representing the Western Tablet & Stationery Co., St. Joseph, Missouri. Floyd H. Fay is sales manager on the Pacific coast for the Western Tablet & Stationery company.

The Crown-Willamette Paper Co., San Francisco, has started construction of a new branch plant after plans made by the Austin company, at East 12th and Evergreen streets, Los Angeles. The project includes a one-story main mill unit 193 x 315 feet and a two-story office building, costing a total of $300,000 with equipment. Construction is already starting and it is expected to have the work completed by the first of the year. The new plant will be used as a converting mill, manufacturing paper from stock made at the mills of the Crown-Willamette Paper Co. at Oregon City and West Linn, Oregon.

Donald Ingram, president of the Ingram Paper Co., Los Angeles, has announced an expansion of the company to include a complete fine paper department, the company having previously handled coarse papers almost exclusively. R. W. Geils, who has been engaged in the paper business for more than 15 years, and who recently was in business for himself in New York, has come west to act as manager of the new department of the company. New lines already stocked are from Hollingsworth & Whitney; from the Chemical Paper Manufacturing company and from Knowlton Bros.

OREGON

Paper Mill Executives Aid Employment Campaign

Two men prominent in the paper industry of the state are also now much in public favor because of their efforts in behalf of increased employment and business stimulation generally.

George W. Houk, executive vice-president of the Hawley Pulp & Paper Co., Oregon City, is acting as secretary of the campaign boosting Oregon products, which had its impetus in the executive offices of Governor Meier. This movement is gaining headway rapidly, and civic meetings are being held throughout the state asking that consumers purchase some extra Oregon products each day to keep mills and factories operating.

Charles K. Spaulding, president of the Spaulding Pulp & Paper Co., who received appointment from the governor to the state highway commission, met with the commission September 3 and urged the carrying out of a road construction program immediately which would give employment to hundreds during the winter. The proposed program for highways now under consideration would total $1,000,000.

Dr. Lodewick Appointed to Experiment Station

Dr. John Elton Lodewick has been appointed chief of the forests products section of the Pacific Northwest forest experiment station in Portland, succeeding W. H. Gibbons who was recently transferred to the forestry department at Washington, D. C.

Dr. Lodewick has three degrees from the New York State College of Forestry and has taught in the departments of wood technology of Syracuse, Virginia Polytechnic institute and the University of Maine.

Just at present the lumber and paper industry are intensely interested in the forest products division of forestry and the uses to be made of waste wood materials.

D. L. Maxwell of The Tissue Co. came up from San Francisco last month and took some side trips through Oregon in addition to spending time at the Camas plant of the company.

Crown Zellerbach corporation for the three months ended July 31, reports consolidated net income of $1,276,559 after all charges but before deducting minority stockholders interest in subsidiaries, as against $1,185,086 reported on the same basis for the corresponding quarter last year. After deducting minority stockholders interest of $425,769, consolidated net income for the three months ended July 31, 1931, is equivalent to approximately $3.40 per share on the 250,601 combined series "A" and "B" preference shares outstanding. Last years' report for the same period showed $3.03 per share computed on the same number of shares after deducting minority stockholders' interest of $426,242.

The Austin company through its Portland offices has been given a contract to build a set of lime slacking and sledge tanks at Salem for the Oregon Pulp & Paper Co. of which F. W. Leadbetter is president. The project represents an investment of $35,000 according to engineers in charge.

Mills Protest Against Proposed Freight Increase

The regional hearing of the interstate commerce commission which was held in Portland late last month in a four day session for discussion of the proposed 15 per cent blanket increase of freight rates requested by railroads, drew emphatic protest from pulp and paper interests.

O. M. Allison, secretary of the Spaulding Pulp & Paper Company, Newberg, Ore., in addressing the commission, stated that the present freight rates now equal 40 per cent of the price of pulp at their mill. He said that it costs the Spaulding company $10 a ton to get their shipments to Chicago markets while foreign concerns can reach that market for $8 or less. Mr. Allison stated that his company was now actually selling their output at cost under present rates.

The Spaulding Pulp and Paper Co. has been sending some initial pulp shipments by the all-water route and this experiment is being watched with interest by other manufacturers in the district as it seems to promise a program of economy.

Another point which was brought out at this hearing was that shippers would not use the railroad for freight but would divert their business to the truck lines if the increase becomes effective.

Ray Smythe has resigned as manager of the Willamette Iron & Steel Works, Portland, with which concern he has been connected for 14 years, and has entered the machinery brokerage business for himself. Mr. Smythe is known to the pulp and paper industry of this region through his work as chairman of the equipment division of T.A.P.P.I. and also as a member of the board of directors of the National Safety Council in Portland.

❖ WISCONSIN ❖

Two Mills Adopt Five-Day Plan

Changing policies to meet changed conditions gradually are being put into effect in paper mills in Wisconsin. Two notable instances of this are the five-day working week as a fixed policy of the Consolidated Water Power & Paper Co., Wisconsin Rapids, and a universal wage reduction of ten per cent at the Nekoosa-Edwards Paper Co., Nekoosa and Port Edwards, Wis.

Mills of the Consolidated company at Wisconsin Rapids, Stevens Point, Biron and Appleton will operate on a six-day schedule as usual but each employe will have two days off in each seven. The policy is effective in some departments but will not be operative in others until enough men can be trained to take the jobs of absentees. Wage scales will be the same as before, but each worker will receive less by virtue of working fewer hours.

In adopting this policy, George W. Mead, president, announced that the completion of construction and expansion would have made it necssary to lay off about 50 men. The five-day plan will enable the company to keep these men at work and add a few more. Men who have worked for the firm a long time really own their jobs, Mr. Mead said in a published statement, and if there is work to be had, each man is entitled to his share of it.

Installation of equipment will soon be completed at the elaborate new building for the Institute of Paper Chemistry at Lawrence College, Appleton. Classes are to be started September 23, following dedication of the building, and the enrollment probably will be increased from ten of last year to 25 this season.

Two machines instead of one are now operating at the Union Bag and Paper Co. mill at Kaukauna, Wis., following the addition of 15 men. The company had kept only one machine going since removal of the bag division to Orange, Texas, in June, 1929, but alternated so as to keep both machines in condition. The mill is now on approximately a full schedule.

Forestry News

Bayfield county, in Northern Wisconsin, will shortly establish county forests totalling 117,920 acres in order to dispose of tax delinquent lands and make them bring in at least ten cents an acre annually from the State. This move will aid the reforestation now so vigorously pushed in the State. Fire protection also has been increased in the north, through purchase by the Wisconsin Conservation Commission of 14 trucks and 22 gasoline power water pumpers for distribution to fire districts. The commission also has added 36,800 feet of hose and a machine especially equipped with a 300-gallon centrifugal pump to combat peat fires.

Reforestation lands purchased by the Government in Wisconsin during the last year totaled $171,551 in value. In addition, the Government spent $140,125 in its three federal forests in this state, using $60,000 for roads and fire lines and $28,000 for suppression of forest fires.

In completing 30 years of federal forest work this summer, Dr. Raphael Zon, director of the Lake States Forest Experiment stations in Minnesota and Northern Michigan declared forests in private hands are disappearing much faster than 25 or 30 years ago. United public and private effort are necessary, he says, in order to have real forestry. The total acreage of national forest is now 170,000,000.

Under a reorganization of the Wisconsin Conservation Commission, the new chairman of the forestry advisory committee is William Mauthe, of Fond du Lac, Wis. He formerly was chairman of the conservation commission but resigned. Others on this committee include D. C. Everest, vice-president and general manager of the Marathon Paper Mills Co., and R. B. Goodman, capitalist interested in state paper mills.

F. J. Sensenbrenner, president of the Kimberly-Clark Corp., Neenah, Wis., is one of two industrialists of Wisconsin to be chosen on the executive council of Gov. Philip F. LaFollette. The council was created by the last state legislature to advise the governor and assist him in solution of state problems.

About 15,000 square feet of additional floor space will be provided the Menasha Products Corp., Menasha, Wis., the carton division of the Marathon Paper Mills Co., by the construction of a new "L" shaped warehouse. It will be of frame and metal construction and adjoins the wax paper plant.

Dividends of 62½ cents a share customarily paid by the Kimberly-Clark Corp., Neenah, will be distributed again on October 1 to stockholders of record on September 12. The company's showing continues to be excellent although somewhat below a year ago.

A new building is being built by Interlake Pulp & Paper Co., Appleton, a branch of the Consolidated Water Power & Paper Co., to house the bleach plant. Newer machinery is to be installed and the capacity increased.

After serving with the Nekoosa-Edwards Paper Co., Nekoosa, for 29 years, C. A. Youngchild, general paper mill superintendent, has resigned to accept the production managership of Southern Kraft Corporation. He will headquarter at Mobile, Ala., and will have in charge mills at Mobile and Moss Point, Miss., and Panama City, Fla. No successor has yet been appointed.

Bond business papers in pastel shades of fern, peach, melon, sapphire and lavender are now being made by the Whiting-Plover Paper Co., Stevens Point, according to E. A. Oberweiser, president. The trends of the times indicate this would open up a new market and the sale has been widespread.

Some of the paper box manufacturers in Milwaukee are charged by the attorney general of Wisconsin with conducting an illegal trust and conspiracy in restraint of trade. Sub-

peonas have been issued for appearance of the manufacturers before a court commissioner to give testimony in refutation of the charges.

By raising the head of its dam in the Wisconsin river at Stevens Point, from 14 feet to 17 feet at an approximate cost of $100,000, the Consolidated Water Power and Paper Company has added 1,000 hp. to its power capacity, creating a total of 5,800 hp. Additional water is being drained from a slough by means of a pumping station put up by the company, containing two 3,000-gallon pumps for ordinary use, and two 50.000-gallon pumps to control flood conditions. The company also built concrete dikes along the banks, elevated the Soo line railroad tracks and improved a park for the city to make up for flooding of some of the land.

An income tax refund has been allowed the Consolidated Water Power & Paper Co., Wisconsin Rapids, Wis., on an over-assessment of $28,964.45 in 1918. A re-examination of the books showed an understatement of the amount of invested capital at that time.

D. S. Davis, who has been associated with the Mead Corporation, Chillicothe, Ohio, will succeed Arthur Bouffard, itinerant instructor of pulp and papermaking for the state board of vocational education, who has resigned to take a new position. Mr. Davis was with the International Paper Co. at Glens Falls, N. Y. and the Container Corporation of America at Manayunk, Pa., previous to his connections with the Mead Corporation.

Appleton Coated Paper Co., Appleton, Wis., has purchased the abandoned plant of the Hayton Pump and Blower Co. The property adjoins the paper mill and was acquired as a protection against future expansion.

Alexander Noble Strange passed away at his home at Menasha, Wis., after a two-day illness. He became associated with the Strange Paper Co. in 1896 and operated the plant until 1905. From 1904 to 1925 he was secretary-treasurer and general manager of the Island Paper Co., Menasha, Wis. He also was associated with the Wolf River Paper & Fiber Co., Shawano, Wis., for 14 years.

On August 27, Mrs. Frank J. Harwood of Appleton, Wis., died of illness at Los Angeles, Calif. Her bereaved husband is president and general manager of the Appleton Woolen Mills, one of the oldest paper mill felt plants in the country.

John E. Mulchaey

John E. Mulchaey, general superintendent of the Grandfather Falls Paper Co., Merrill, Wis., passed away suddenly on August 8. Although 78 years of age, Mr. Mulchaey had attended to his duties up to the day of his death.

Mr. Mulchaey was one of the oldest paper makers in active service, and it is believed had put in more years of active service than any other papermaker now living. He was born in Great Barrington, Mass., August 31, 1853 and entered the paper business at the age of 11 years. Without school advantages he became an apprentice at the plant of the Smith Paper Co., Lee, Mass. Following seven years service with that company, he was successively employed by a number of well-known paper mills. He had been general superintendent at Merrill for the past 18 years.

Mr. Mulchaey was the father of nine children, two sons and seven daughters, all of whom survive him.

The Ludlow Valve Mfg Co., of Troy, New York, announces that it will manufacture in Canada as The Canadian Ludlow Valve Mfg. Co., Limited, with factories at Three Rivers, Que., St. Thomas, Ont., and Fort William, Ont. It is stated that Canadian manufacturers and municipalities may be assured of receiving the same high quality valves and hydrants that have heretofore been associated with Ludlow products.

❖ MICHIGAN ❖

Cost and Technical Men Discuss Colors

The regular meeting of the Cost and Technical Association of Kalamazoo, was held the last Wednesday in August and was preceded by golf in the afternoon.

Frank Libby, of the Kalamazoo Vegetable Parchment Co., was the principal speaker and gave a very interesting discussion on Colors for Paper.

Colors, other than pigments are grouped as basic, acid and direct in the order of tinctorial power. From the standpoint of fastness, however, this order is reversed.

Bleeding of the color into the white water is an aggravating condition in the paper mill and it will be found that the greater the tinctorial power the color posseses the more the bleeding.

To avoid any possibility of specks in the paper, Mr. Libby advised that all colors be dissolved first, then strained before adding to the beater. This is especially true if the beating time is limited. Where the color cannot be dissolved, then it is best to add it early to the beater and allow plenty of beating to give the maximum dispersion.

One of the very important points to know in making colored paper and matching colors, is the requirements of the finished sheet. If there are any special conditions which this color is to meet they should be known in advance. The best results can be obtained by making laboratory matches beforehand. Cutting the laboratory formula before putting it on the machine is a matter for individual consideration in each mill. The amount to be cut will vary in each instance and will also vary with the color being used. Basic colors, due to the bleeding, will not be cut as much as the very fast acid color.

On the paper machine, the sequence of colored orders is very important due to the affect on shade of the preceeding color.

The second speaker of the evening was the president of the club, Glen Ingling, of the Kalamazoo Paper Co., who spoke on Color Costs.

The first thing Mr. Ingling stressed was the fact that the first cost was not always the last. Quite often the more expensive color will be cheaper per ton of paper than the cheaper color because of the smaller amount needed to produce the desired shade. This, of course, has to do with shade only and does not take into consideration the use requirement of the paper. It may be necessary to go to a higher cost per ton in order to produce a fast to light shade or some other special requirement.

Color runs increase the cost per ton of the paper more than the actual cost of the color used. A colored run always necessitates a shutdown for wash up, lost time for matching color and many times lost time because of the color going off shade. Even when running a series of colors which have been well planned, there will be some lost time for correct matching and perhaps a slight wash up.

The matter of long color formulas was brought up. Three colors should be sufficient to match almost any color with a possible maximum of four colors. At times when matching a color on the machine, a slight excess of one may be used and have to be killed with another but if this is done, it should be corrected on the next beater and the color formula not allowed to go on with the additional color on it.

Fibrous Material Discussed at Tappi Meeting

The Kalamazoo Section of Tappi held its August meeting in the offices of the Hawthorne Paper Co. and discussed briefly the coming fall meeting. The matter of charging dues for membership in the section was also discussed but was finally laid over to the October meeting.

Election of officers was held and in appreciation of the efforts of the present officers in effecting the transformation of the Paper Technologists Club to a Section of Tappi they were all re-elected as the first officers of the new section. They are: Max Bardeen, Lee Paper Co., Vicksburg, chair-

This installation is equipped with Dodge-Timken Bearings.

CHAMPION

increases super-calender production 37½%, cuts power cost in half and effects proportionate economies in production costs by modernizing calender stacks with Timken Bearings. Write Timken for complete information, or get in touch direct with the builder of your machines.

Every mill wants to increase calender speed, for that means more finished paper per hour ... lower cost per pound. You can do it—just as The Champion Coated Paper Company has done—by taking friction's drag out of the calender rolls with Timken Bearings.

In order to obtain the desired additional speed with plain bearing super-calender stacks, Champion would have had to install new motors of considerably higher capacity. As it is, they are operating with the original motor and drive equipment and are still saving power.

Many other benefits are indicated by the use of Timken-equipped calender rolls. These include:

1. *Better calendering* due to (a) running with extra nip (b) permanently accurate roll alignment (no eccentric adjustment necessary) (c) minimum heat rise in rolls.

2. *Quicker re-threading of paper after a break.* Timken Bearings so reduce starting torque that the stack can be started with weights down.

3. *Easier starting.* With frictional resistance in the journals eliminated, less power is required to start the stack, sudden jerks are avoided and journal breakage prevented.

4. *Lubrication economy.* Timken Bearing housings can be completely sealed against oil leakage, thus preventing waste. No water-cooling of bearings necessary.

5. *No paper loss through oil leakage.* As there is no oil leakage with Timken-equipped rolls, the edges of the rolls do not become damaged. The full width of the roll is thus usable, still further increasing production.

6. *Lower maintenance cost.* No overloading of motors —no burned-out armatures. Less re-grinding of rolls required because of permanent alignment feature. Broken journals practically eliminated through smooth starting.

It is estimated that the investment required to change plain bearing calender stacks over to Timken Bearings will be returned to mill owners in 2 to 3 years.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

TIMKEN *Tapered Roller* **BEARINGS**

man; W. Kent Kidder, Allied Paper Mills, Kalamazoo, vice-chairman; Harold Miller, Paper Makers Chemical Corp., Kalamazoo, secretary-treasurer.

Following the election, Carl C. Schneider, Hawthorne Paper Co., read a paper on "Fibrous Raw Materials."

Mr. Schneider stated first that no other material is as important in the manufacture of paper as the fibrous material. It is this material which makes the sheet of paper and every characteristic desired in the finished paper must be present in the fibrous raw material. In some cases where the pulp or rags are lacking in the necessary characteristics, mills resort to the use of starch or other agents. These may help a little, but very little.

Mr. Schneider stressed the fact that paper mills are too much at the mercy of the pulp mill. Specifications are very rigid on the paper to be produced, but at present there seems to be no way in which the papermaker can be assured of a uniform quality pulp or rag. The mills must get together and work out the necessary tests and set up specifications which the pulp must meet and when this is done a large part of the papermakers' grief will be taken care of.

Rags will vary greatly in quality due to the fact that the textile mills must meet certain price demands of their customers and in order to do this must make use of cheaper quality fiber and this finally reverts to the paper mill. Beating and strength tests must be made on rag stock as well as wood pulp. The method of testing is very important but the actual making of hand sheets is not as important as some would have you believe. The speaker clearly brought out the point that the idea that a certain make of sheet mold must be used is pure politics and should not enter into the activities of the association.

If a hand sheet is made which has from the standpoint of the papermaker, a good formation, then it is sufficient for the purpose. The drying of the hand sheet is more important than the making. Air drying is absolutely unsatisfactory because it does not represent machine operation in that the machine dries at high temperature and under tension. Mr. Schneider has developed a method of drying which does these things and very satisfactorily. Brass plates about three-sixteenths inch are used and perforated similarly to a suction box. On the corners of the plates are welded small pieces of the same material (on one surface only) and two of these plates make a unit. The plate is placed on the table with the corner pieces acting as legs, a felt is placed on the plate then the hand sheet and another felt. The second plate is placed on top of the second felt with the corner pieces upward. This makes the complete unit and as many units can be prepared as wanted. The units are stacked and the corner pieces being to the outside in all cases act as separators and provide an air space between units for the circulation of air and removal of steam. The stack of units are clamped together and Mr. Schneider stated he is careful to use the same pressure each time. The complete pack is placed in a thermostatically controlled oven and dried. Drying time is about one hour.

During the discussion it was brought out that chemical tests are very important and it is possible that they may be developed to the point where they will tell the entire story making the process of pulp testing much simpler than it is at present.

Chief Engineers Entertained with Travel Pictures

On the evening of September 2, the Chief Engineers Club of Kalamazoo held a dinner meeting at the Columbia hotel, Kalamazoo. Following the dinner, W. E. Kidder, well-known as a traveler and movie fan, gave a very interesting talk illustrated with pictures he had taken of the Panama Canal, Colon, the trip from Pacific Coast to the Hawaiian Islands and to India. The series ended with a reel on Hunting Big Game with the Camera. This picture was made in northern Canada and it proved very interesting to see how close a person could get to bears, moose and deer without their taking fright.

Ed Rutz, who presided at the meeting, announced the resignation of the president, Mr. Neal, of the Michigan Paper Company, also that the secretary, Cal Berry had left the Bryant Paper Company to go with the Munising Paper Company, and therefore had tendered his resignation from the Club. A special election will be held at the October meeting.

OHIO

Tom Harvey to Retire

Announcement is made that Tom Harvey, who has been superintendent and manager of The Gardner & Harvey Co., Middletown, Ohio, for more than 20 years, will retire from the company, October 1.

Walter Sooy Joins Gardner & Harvey

Walter S. Sooy, successor to Tom Harvey as plant executive of the Gardner & Harvey Paper Company, has assumed his new duties.

Mr. Sooy, for 25 years an affiliate of the Michigan Carton Company, of Battle Creek, Mich., is a man of wide experience in the paper manufacturing business. His knowledge of papermaking especially deals with the manufacture of boxboard cartons and engineering.

In the retirement of Mr. Harvey, Middletown loses one of the most highly recognized paper men in the industry. Though he has been associated with the Gardner & Harvey Company for 22 years, his reputation is wide as one of the best-informed men in the business.

Before coming to Middletown in 1909 Mr. Harvey managed some of the largest paper mills in the world. He came here from West Carrollton.

Recognized throughout the industry as one of its leading technical men, Mr. Harvey has been a factor in making the Gardner & Harvey Company one of the leaders in its line in the country.

He is a member of the American Pulp and Paper Mill Superintendents Association, having held office in that organization.

Mr. Harvey has made no announcement of his future plans.

National Research Council Plans Tour

The National Research Council is sponsoring a tour of research laboratories this fall, for the purpose of showing members of the party how all classes of industry, both large and small, are utilizing scientific research to aid them in meeting major problems in a period of business readjustment.

It is estimated that 100 business men and bankers will make this tour which is scheduled for October 5 to 15. Maurice Holland, director of the Council's Division of Engineering and Research, who is working out the details of the tour, has announced that a number of executives from leading paper and paper products concerns will be among those invited to make the trip, which is similar to that successfully conducted last October under the same auspices.

Mr. Holland has stated that while men in the paper manufacturing and paper products industries, as well as executives of other industries, will have a chance to see what laboratory workers are doing in their particular fields, the tour is not designed primarily for that reason, but rather to offer an opportunity for a general view of what is being done in the whole field of industry, permitting a close-up view of just what our men of science are doing and how they are doing it. Consequently, a diversified program will be arranged in which the vistors will see the latest advances in research looking to better manufacturing processes, lowering production costs, development of new fields of application, search for by-products and new materials, and new outlets for these new products.

Paper Week in February, 1932

The American Paper and Pulp Association announce that Paper Week in 1932 has been set for the third week in February, beginning Monday, February 15.

The meeting will be held at the Hotel Pennsylvania, New York, which hotel has cared for the convention for the past two years in a manner that was eminently satisfactory to all of the interested groups.

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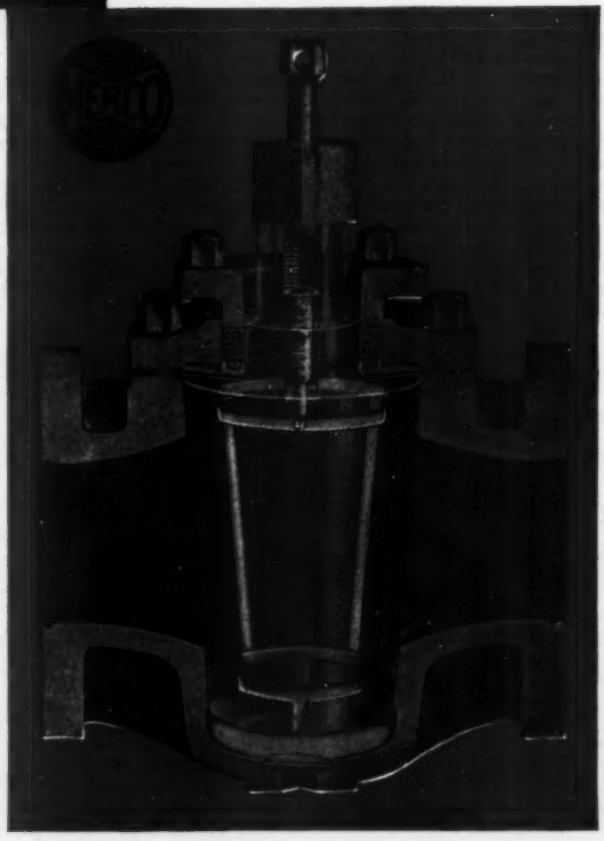

These phantom views reveal the efficient application of "Sealdport" lubrication. The lubricant stick ("Merco" Lubricant) is dropped into the shank of the plug and the lubricant screw turned down on it until the lubricant in the shank is forced laterally through passages leading to lubricant ducts. Reaching the base of the plug the lubricant fills a sealed chamber and exerts upward pressure on the base of the plug which releases the plug instantly, should it be tight. Positive distribution of the lubricant in two unbroken rings around both ports of the valve when in the shut-off position forms an effective seal. The plug can be rotated 360° without permitting escape of the line fluid to the atmosphere. It is unnecessary to rotate the valve to create a satisfactory lubricant seal. A few turns on the lubricant screw will suffice.

Catalog No. 8 is now ready.

Also ask for information regarding the "Merco" Swivel Flange for welded pipe.

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Factory - Oakland, Calif.

Canada - Peacock Bros., Ltd., Montreal, Toronto, Winnipeg, Vancouver. (Also Sydney, N S)
England - Audley Engineering Co., Ltd., Newport, Shropshire.
Buenos Aires, Argentine, - General Electric, Soc. Anon., Victoria 618 Esq. Peru.

The Month at Washington

POSTAL Rates Increase—With everything else going down, postal rates are going up and effective September 1 the international rates of postage increased on letters and postcards for delivery in Great Britain, Northern Ireland and the Irish Free State to 5¢ for the first ounce or fraction thereof and 3¢ for each additional ounce or fraction thereof, and the rate on single postcards to 3¢ as against the rate for several years of 2¢ on letters and postals.

Higher postage rates also went into effect for mailings to Canada, Newfoundland and Labrador, applying to both regular and air mail, postage on letters weighing one ounce or less sent by ordinary means being 3¢ and on single postcards 2¢, while new air mail rates are 6¢ for the first ounce or fraction, and 10¢ for each additional ounce, as against the rates prevalent for sometime of sending letters and cards within the United States.

Revised Duty on Magazines and Periodicals—Revised duties on foreign newspapers, magazines and periodicals entering Canada went into effect September 1. Under the revised law, daily newspapers are admitted duty free. A duty of 15 cents per pound may later be declared by the Canadian Government on week-end newspapers.

Magazines containing between 20 and 30 per cent advertising will pay a duty of two cents per copy. Where the advertising content exceeds 30 per cent, the tariff will be five cents a copy. Magazines containing not in excess of 20 per cent advertising, or those published in the interest of religious, educational, scientific, agricultural, labor or fraternal organizations, will be admitted duty free.

Higher duties on Canadian subscriptions to foreign magazines or periodicals entered prior to June 2, 1931 will not become effective until April 1, 1932.

Use Territorial Trade-Mark Rights—The Department of Commerce suggests that American business executives should familiarize themselves more thoroughly with the laws of non-contiguous territory of the United States, which afford protection for the trade-marks and brands. Few persons fail to take advantage of the protection afforded in the continental United States, it is said, but many overlook the rights they have in such places as the Philippines, Hawaii and Porto Rico, and many have not in fact asserted their rights.

The Department, through its Division of Laws, has therefore compiled a list of the laws to which the American exporters may turn and since the merchandise movement to these territories aggregates a quarter of a billion annually, it is well worth procuring a copy of this list.

Population Center Shifts Again—The constant westward movement of the center of population of the United States since the first decennial census in 1790 has clung to the 39th parallel of latitude, extending from near Baltimore, Md., on the east coast to a point just north of San Francisco, Cal. on the west. The center of population under the 1930 census figures is determined as 2.9 miles northeast of Linton, Greene County, Ind., having moved 22.3 miles westward and 7.6 miles southward from the 1920 center near Spencer, Ind. Since the first center of population was established in 1790, 23 miles east of Baltimore, it has moved westward a total of 589 miles, marking the increase in the population of the middle and far west.

Copperized Paper Saves Pears—Copperized paper wrappers for pears boxed for shipment in Washington and Oregon will practically prevent the spread of "gray mold" or "nest decay" in storage, says Dr. J. S. Cooley, plantpathologist of the Department of Agriculture, a new discovery. Ordinary paper does not check the spread of this rot to sound fruit, it is pointed out. Doctor Cooley developed a wrapping paper impregnated with copper, and this proved highly satisfactory last year in packing about 30,000 boxes of pears, and now most of the Oregon pears to be stored this year will be wrapped in copperized paper. The department has applied for a public-service patent on the new process.

Higher Freight Bill for Paper Protested—The paper industry of the Nation would be forced to pay an additional freight bill of $20,000,000 a year, if the railroads put through a 15 per cent freight rate advance, the Interstate Commerce Commission was informed by the American Pulp and Paper Association during hearings recently on the carriers proposal (Ex parte No. 103).

"Considering the fact that from three to five carloads of raw materials are required to produce one carload of finished paper," said S. L. Willson, president of the association, "it is easy to visualize the great extent that those engaged in the industry would be affected by an increase in rates of 15 per cent, which under present downward trend of prices could not be passed on to the consumer, but which would necessarily have to be absorbed by the manufacturer and increase his present losses."

Interstate Commerce Rulings—Rates on pulpwood, in carloads, from points in Canada to destinations in New York were found not unreasonable, in a recent decision of the Interstate Commerce Commission (J. Fred Amsden vs. Canadian National Rwys. No. 22611), and the complaint was dismissed.

Proposed increased rate on newsprint paper, in carloads, from Thorold, Ontario, to Chicago, Ill., were found justified in another decision (I & S Docket No. 3538).

Proposed rates on scrap or waste paper, in carloads, between points in southwestern territory and between points in that territory and eastern defined territories were found not justified in another decision and disallowed (I & S Docket No. 3497).

Aging Qualities of Paper Towels—The Bureau of Standards has been studying the aging quality of paper towels, and the principal harmful effect of storage appears to be loss of absorptiveness. An accelerated aging test which involved heating the towels has been found to be a reliable guide to the retention of absorptive quality during storage. The strength of the towels as measured by the tensile breaking test, remained quite constant during storage. The towels that best retained their absorptiveness had low rosin content, low acidity and long, clean fibers.

Employment in August—The Bureau of Labor Statistics reports changes in employment and payroll totals in August as compared with July, based on returns from 46,058 establishments in 15 major industrial groups, employing 4,491,521, showing a decrease of 2. per cent in employment and 4.8 per cent in pay-roll totals over the month's interval. With 1926 as the basis of 100, we find the following changes in the paper group:

	Employment			Pay-roll Totals		
	1930	1931		1930	1931	
	Aug.	July	Aug.	Aug.	July	Aug.
Paper and printing	97.6	90.2	89.5	99.4	89.6	86.8
Paper and pulp	89.9	81.0	81.1	84.0	71.2	68.1
Paper boxes	87.4	80.9	80.1	90.4	79.8	76.9
Printing, book and job	100.3	88.7	88.1	102.6	87.5	85.2
Printing, newspapers	107.8	106.2	104.5	109.8	107.9	104.8

Wholesale Prices—The recent downward movement of wholesale prices haled in August as shown by the index number as computed by the Bureau of Labor Statistics, covering 550 commodities and based on 1926 as the average of 100 we find the following changes for paper and pulp:

August 1930	July 1931	August 1931	Purchasing power of the dollar, August, 1931
83.8	80.3	80.1	1.248

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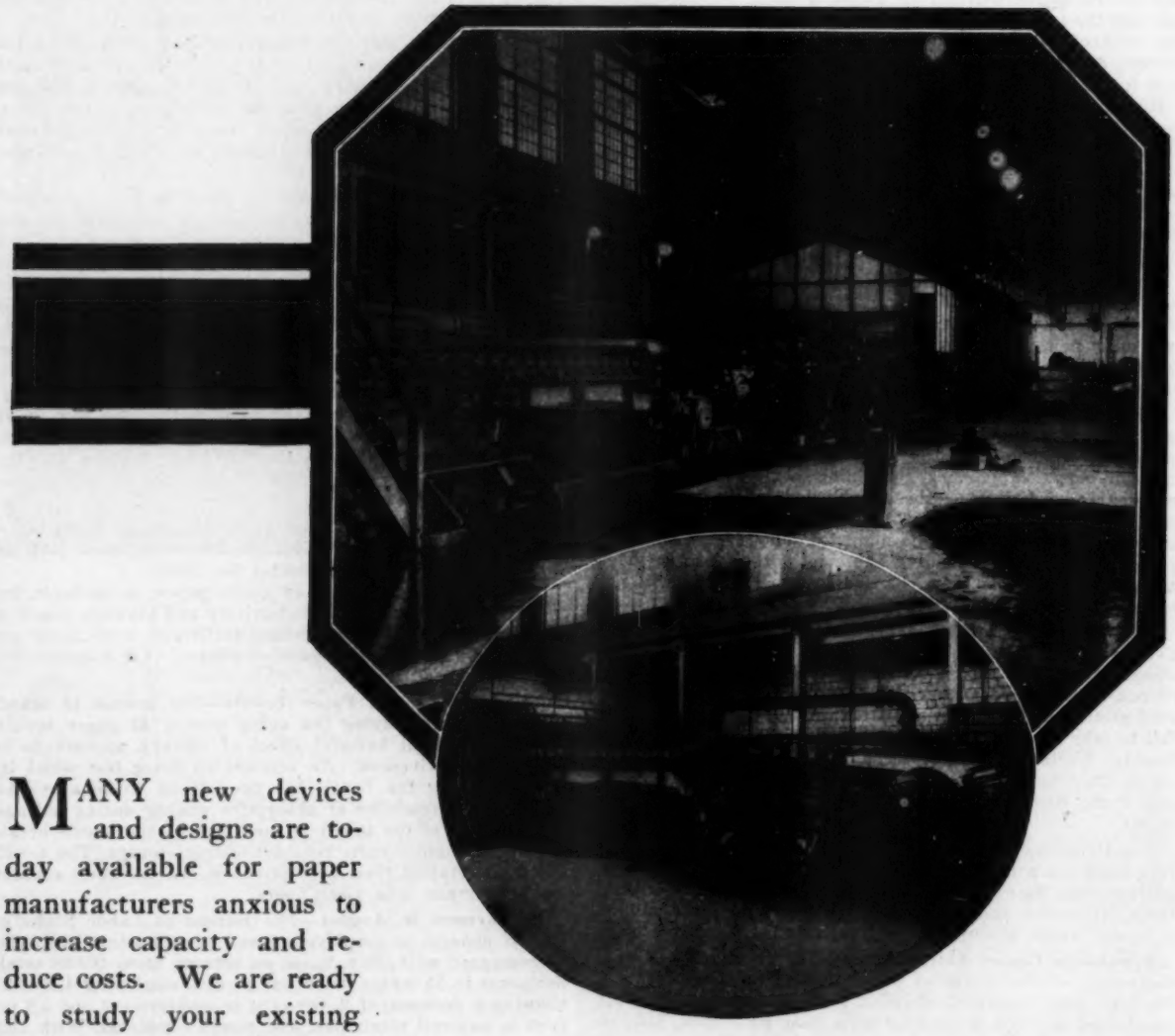

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Canadian News

Newsprint Rate Confirmed

The Board of Railway Commissioners at Ottawa has rendered judgment confirming its order of last January fixing 27½ cents as a "reasonable" rate for the transportation of newsprint by the Canadian National Railways between the plant of the Ontario Paper Co. at Thorold, Ont., and Chicago. The judgment follows an appeal by the Ontario Paper Co. and the Chicago Tribune, which absorbs all the production of the Thorold mill.

The C. N. R. had previously carried the newsprint on a special rate of 25 cents, this being arranged on the understanding that the railway would be used to make all deliveries for 12 months of the year and that no resort would be made in summer time to water transportation. This latter provision, the railway contended, had been violated, and in view of that violation the company asked that the rate of 27½ cents be enforced. The Commission concurred in the request.

Prospective Box-Makers' Merger

The attempt, made about a year ago, to effect a merger of various companies in the container, carton and paper box field in Canada, has been renewed, it is stated, a New York organization now endeavoring to bring the different companies together. Demoralization in the container and paper box field in Canada came first as a reflection of similar conditions in the United States, and was intensified by the erection of a number of new plants that definitely provided excess production capacity.

While the present Government at Ottawa has given to the package trades substantial protection against products dumped in from the United States, there is considerable price-cutting going on. Few of the companies are earning normal profits. Offers have been made, it is stated, to several of the companies to join in a merger, but it is hardly likely that such organizations as the Hinde & Dauche Co. of Canada, Dominion Paper Box Co. (subsidiary of the F. N. Burt Co.) and some others will be interested in the proposition, whatever any of the other companies may do.

During the month of July Canadian newsprint mills operated at 56.8 per cent of capacity, against 60.3 per cent in June and 71.3 per cent in July of last year. Production for the month totalled 182,731 tons, against 193,271 tons in June. For the first seven months of the year Canadian mills, operating at an average of 59.2 per cent of capacity, produced 1,319,627 tons of newsprint, a decline of 12 per cent from the corresponding 1930-production of 1,503,415 tons when the mills operated at an average of 72.2 per cent. Canadian exports of pulp and paper in July were valued at $10,938,148, a decrease of $1,697,286 from the previous month and of $3,070,138 from July 1930. Woodpulp exports for the month were valued at $2,475,628 and exports of paper at $8,462,520, as compared with $2,241,548 and $10,383,942, respectively, in the month of June.

Six-Month Earnings Reported Higher

International Power and Paper Co. of Newfoundland, a division of International Paper and Power Co., for the six months ended June 30, 1931, reports gross sales of $4,301,751, as compared with $4,230,808 for the corresponding period of 1930; net revenue of $1,519,468 compared with $1,364,479; and balance added to surplus of $402,840 compared with $182,658.

This is an increase of ten per cent in net revenue, including other income, available for interest and reserves, for the first six months of 1931, despite the effect (retroactive to January 1) on 1931 earnings of the $5 per ton cut in newsprint prices announced in April. There has been a steady increase in mill operating efficiency and large savings in fuel costs have been made possible by the installation of 58,000 horsepower additional generating capacity at the Deer Lake hydroelectric plant. This installation was made at exceptionally low capital cost—only slightly over $28 per horsepower.

The new Canadian-Australian trade treaty, tabled in the House of Commons at Ottawa in July, had now been proclaimed in both countries. Issuing of proclamations in Canada and Australia brought the new tariff arrangements under the agreement between the two countries into immediate operation. Under the treaty, Canada gets the British preferential tariff on 415 out of 433 items in the Australian tariff, thus improving its opportunities in a potential market of $630,000,000 annually.

◆ QUEBEC ◆

Canada Power Plan Declared Effective

Following a meeting of the securities protective committee of the Canada Power and Paper Corp. and its subsidiaries, held in Montreal on August 10, official announcement was made by Hon. Charles A. Dunning, chairman of that body, that the committee had decided to declare the plan effective. The majority of all classes of securities had already been deposited in favor of the plan, and the necessary legal steps have been initiated to form the new company looking towards the carrying out of the new plan, which will be known as the Consolidated Paper Corp., Ltd.

Coincident with the declaration with regard to the plan itself, several important announcements were made. The first was confirmation of the statement that L. J. Belnap had accepted the committee's appointment as president of the corporation. The second was the announcement that the committee had decided to increase the number of the board from 11, as originally stated in the plan, to 15 in order to secure full representation in the interests of all classes of security holders. Under this modification the number selected by the committee has been increased from seven to nine and the number to be elected annually by the shareholders has been proportionately increased from four to six. The third announcement of interest is that the committee had also decided to further extend the time for deposit of securities under the plan to August 31. While a majority of all classes of securities have already been deposited, the committee stated that it desired that further opportunity be given for minorities still outstanding to become direct participants under the plan rather than incur the complications and possible additional expense otherwise involved.

Mr. Dunning announced the committee's selection of the following nine gentlemen, who have agreed to act:

L. J. Belnap, president—formerly president Worthington Pump and Machinery Corp.; director, United Dry Docks Corp.; director, Certain-teed Products Corp.; director, U. S. Hoffman Machinery Co.; director, Worthington, Simpson, Ltd., London, England.

F. G. Daniels—president and managing director, Dominion Textiles Co.; president, Montreal Cottons, Ltd.; director, Dominion Glass Co.; director, Crown Trust Co.

Norman J. Dawes—president and managing director, National Breweries; director, Royal Trust Co.; director, Dominion Bridge Co.; director, London and Scottish Assurance Co.; president, Montreal Board of Trade.

Hon. C. A. Dunning—former minister of finance for Canada; vice-president, Ontario Equitable Life Assurance Co.; vice-president, Lucerne Association, Ltd.

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Grinding Machines

NORTON
PULPSTONES

Refractories - Floor
and Stair Tiles

Col. H. D. Lockhart Gordon—Clarkson, Gordon, Detworth, Guilfoyle and Nash, chartered accountants, Toronto.

Ross H. McMaster—president, Steel Co. of Canada; director, Bank of Montreal; director, Canadian Pacific Railway; director, Royal Trust Co.

E. A. McNutt—treasurer, Sun Life Assurance Co. of Canada; vice-president, Montreal Board of Trade.

John J. Rudolf—partner, Iselin and Co., New York.

Charles F. Sise—president, Bell Telephone Co. of Canada; director, Royal Trust Co.; director, Northern Electric Co.; director, London and Scottish Assurance Co.

In addition to those above named, the committee recommended six names for approval at the first shareholders' meeting. The following five gentlemen have expressed their willingness to act; as to the sixth, the committee expects to announce shortly the name of a prominent executive of the Bank of Montreal:

Harold Crabtree—president, Howard Smith Paper Mills, Ltd.; vice-president, Canadian Cellulose Co.

W. H. Howard, K. C., of Brown, Montgomery and McMichael, advocates, Montreal.

Beaudry Leman—general manager, Banque Canadienne Nationale; director, Shawinigan Water and Power Co.; director, Montreal Tramways Co.; director, Trust Générale du Canada.

Charles E. Neill—vice-president and managing director, Royal Bank of Canada; director, Montreal Trust Co.; director, Shawinigan Water and Power Co.; director, Dominion Bridge Co.

Arthur B. Purvis—president and managing director, Canadian Industries, Ltd.; vice-president, Barclays Bank (Canada); director, General Motors Corp.; director, Dunlop Tire and Rubber Goods Co., Ltd.

Briefly, the plan calls for the formation of a new company, with a capitalization of first mortgage bonds (including first mortgage sterling debenture stock) and one class of shares, which will take over the undertakings and assets of the Canada Power and Paper Corp. and constituent companies (with the exception of Angelo-Canadian Pulp and Paper Mills). The new bonds and debenture stock will be on an income basis for five years, and the new securities will be made available for exchange for the existing securities on the basis set forth in these columns last July. No new money is being asked for.

The primary purpose of the reorganization plan was to relieve Canada Power and Paper of heavy fixed capital charges, charges so large that the company was not able to earn sufficient money to meet them. The new capital set-up makes possible the elimination of all fixed charges for a period of five years, during which period it is expected that the company will be able to build up an adequate working capital and place its finances in a sound position, by which time contracts now in hand or in sight will permit the new company to establish an adequate earning power on the basis of the new capitalization.

In connection with the Canada Power and Paper reorganization, preferred shareholders of Canada Paper Co., common stock control of which is held by Howard Smith Paper Co., are being asked to approve of the cancellation of the lease of the business and undertaking of the company to St. Maurice Valley Corp., one of the Canada Power and Paper subsidiaries, and of the sub-lease thereof to Howard Smith Paper Mills, as well as of an agreement executed between the interested parties providing for such cancellation. St. Maurice purchased the entire common stock of the company in 1926, but when the former entered the Canada Power and Paper set-up, the new owners felt that, inasmuch as special machinery would have to be set up for the marketing of Canada Paper's products (consisting of wrapping and book papers, etc.), it would be better to dispose of their interest to a company better able to handle the enterprise. A deal to this end was arranged with Howard Smith Paper Mills, and it is now proposed to bring this arrangement to an end. According to Harold Crabtree, president of Canada Paper Co., granted this rearrangement of its affairs, the company will be in a position to resume dividend payments on its preferred shares within a reasonable time after return of normal business conditions. The whole scheme of rearrangement, however, hinges on (1) approval of the preferred shareholders, and (2) the reorganization of Canada Power and Paper being completely and effectively carried out.

Charles Riordon

Charles Riordon, retired pioneer pulp and paper manufacturer, and newspaper director, died last month at his home in Montreal following an attack of pneumonia. Mr. Riordon was in his 84th year. Although he had been in failing health for 12 months or so, he had been confined to his home only during the last three months.

Charles Riordon was born on November 28, 1847, in the village of Bally Bunion, County Kerry, Ireland, the seventh child of Jeremiah Riordan, who had been a medical officer in the British navy. The family came to Canada in 1850, lived in Weston, Ont., for some years, and then moved to Rochester, N. Y., where Charles Riordon received his education. He returned to Canada in 1863, at the age of 15, and joined his brother, John Riordon, in building a paper mill at Merritton, Ont., becoming manager in the following year at the age of 16, and in 1866, at the age of 18, he went alone to England and brought back machinery for a new mill.

In 1869 he introduced groundwood pulp into Canada and in 1885 went to Austria and Germany, to study their methods of producing sulphite pulp, bringing back from the latter country two digesters which were floated down the Rhine, and, being too large to go into any cargo boat, were brought to Canada in sailing ships, from which the decks had been removed and then replaced. The first sulphite pulp was made in 1887 in Merritton and Cornwall. The Hawkesbury mill was built in 1898 and in 1910 the Riordon company took in the G. H. Perley Co. The Kipawa mill, together with the town, was built in 1917-18. In 1920 the company gathered together the principal properties on the Gatineau river, enabling them to be developed as a unit, by which time the company had assumed large proportions.

In 1877 the **Toronto Daily Mail** was bought, and Mr. Riordon remained its president until its sale in 1927, a period of 50 years, during which time he was a strong supporter of the Conservative party and an important factor in the establishment of the "National Policy" under Sir John A. Macdonald in 1878, and also a founder of the National Club in Toronto. In 1885 the **Empire** newspaper was bought and combined with the **Daily Mail**, forming the **Toronto Mail and Empire**.

Mr. Riordon was a man of great courage and creative ability, a pioneer in spirit, and always did his utmost to assist in the development of Canada. He was instrumental in building two railways, the Temiscouata, from Rivière du Loup to Edmundston, and the International in New Brunswick, also in rebuilding the Niagara Falls Suspension Bridge, of which company he was for some time the president, and a director for nearly 50 years.

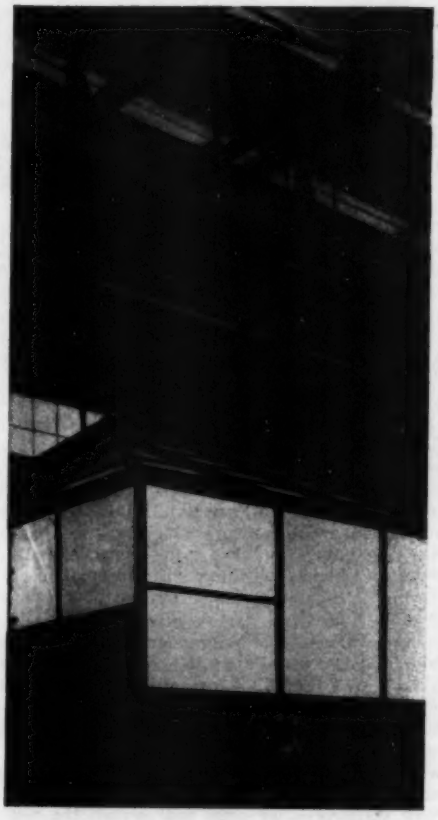
Mr. Riordon is survived by one son, Charles Christopher (Carl) and three daughters. He was married in 1873 to Edith Susan, daughter of J. E. Ellis, of Toronto, who predeceased him a little over a year ago, in May, 1930.

A reduction of 50 per cent in stumpage dues on all damaged lumber cut in the Province up to March 1 next has been announced by an order-in-council signed by the Lieutenant-Governor. This reduction will be subject to the furnishing by the interested companies of a statement indicating the different quantities of damaged timber which they desire to cut, and the number of woodsmen who will be employed, together with their wage list. Green wood will not be subject to the reduction, which applies to the trees killed by fire, insects or fungi, as well as windfalls. The wood will have to be piled, measured and reported separately from sound timber.

Work on the filtration plant of the E. B. Eddy Co., at Hull, is making good progress under the direction of L. S. Dixon, construction manager of the Eddy company. In order that the benefits of the operation of the filtration plant may be utilized and reflected in the quality of products at the earliest possible moment, improvements of a temporary nature are being carried out in the existing mill. This work, although

Whatever It Takes

to maintain leadership in the work of heating and ventilating paper mills!



Years of study, research and practical experience with actual mill problems . . . . concentration of effort and resources on this one branch of engineering . . . . maintenance of the most skilled staff of engineering specialists . . . . sacrifice of time and money to accumulate necessary data from experiments and working tests . . . . providing manufacturing and distributing centers in convenient locations to assure quick dependable service to the whole industry . . . . whatever it takes to achieve and maintain this leadership is possessed by the Ross organization.

The value of Ross service in the past can be measured by the impressive number of prominent successful companies that have utilized it. It can be of even greater value and assistance now when experience and definite knowledge are so important in designing and installing heating, ventilating, drying, conditioning and recovery equipment for pulp and paper mills.

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involving the expenditure of about $200,000 for equipment and construction, is supplementary to the main rehabilitation plan, which contemplates the rebuilding of the sulphite mill after the filtration plant.

S. J. Fisher, B.Sc., M.E.I.C., has joined the staff of Price Bros. as general superintendent in charge of the Riverbend mill, and took up his residence at Riverbend on August 1.

When the recent tariff revision put the companies manufacturing fine papers in Canada in a somewhat more advantageous position than they had previously occupied for quite a long while, the manufacturers made it clear that their intention was to pass on to the consumer such benefits as might accrue therefrom. In this respect they have been as good as their word; and not only has there been an improvement in quality all along the line, but prices generally have been reduced.

ONTARIO

J. H. Black, who for some time past has been assistant to the president of Abitibi and vice-president of Ontario Power Service Corp., a subsidiary company, has resigned to head the Dominion Construction Co. His position on the board of the power company has been taken by L. R. Wilson, who is also vice-president and managing director of Abitibi.

Outlook for Great Lakes Paper Co. Better

It is doubtful if the receivership of Great Lakes Paper Co. can be lifted and the mill operated on a basis which would permit the payment of interest on the $10,000,000 of bonds. Much depends on what arrangements can be made for the allocation of tonnage. Great Lakes was operating five and a half days per week right up to the time of the receivership and has been operating five days since then. As it is one of the most modern low cost mills, the scale of operations reassured security holders that bond interest was being earned and could be paid. The trouble arose because Great Lakes was making paper for Minnesota and Ontario Paper Co., an affiliated Backus-Brooks organization, because its costs were lower, and it was not receiving payment for the work done. The accounts receivable became frozen with the receivership of Minnesota and Ontario Paper.

Since the reopening of the Great Lakes mill under the receivership, payments have been made in cash to the National Trust Co. as trustee and receiver. Whether or not a sufficient profit will remain for bond interest is yet to be determined. It is believed, however, that the Great Lakes company has a sound legal claim to a portion of the tonnage under the sales agreements made in behalf of the affiliated enterprises by the Backus-Brooks interests.

Canadian investment interest in the Great Lakes and Minnesota and Ontario companies is confined to the first mortgage bonds. Of the $25,000,000 of first mortgage bonds of Minnesota and Ontario, it is estimated that between $7,000,000 and $8,000,000 are held in Canada.

Louis I. Lang, president of Lang Tanning Co., Kitchener, has been elected to the bondholders' protective committee of the Great Lakes Paper Co., having been nominated by and representing several Canadian insurance companies who hold a substantial proportion of outstanding bonds.

The old Greensville mill at Dundas is about to start operations again after having been closed for several years. T. Hobro is to be in charge, and it is the intention to produce strawboard which was the product of the mill during its former career. It is said that, later, blotting paper will also be produced there.

A Bates Valve Bag unit has been installed in the Midland mill of the Copeland Flour Mills. As installed at Midland, the system employs paper bags in place of cotton or jute bags for the standard weight of 98 pounds. The bags are made in the patented form and are filled and weighed by automatic machinery. Bates Valve Bag Co. owns two factories in Canada for the manufacture of this type of bag, one at Three-Rivers, Que., and the other at Dryden, Ont. The use of this equipment is a new departure in Canadian milling circles, and its success may result in greatly increased use of paper bags.

Both F. N. Burt Co. and the Moore Corp. earned their dividends during the first six months of the present year. The companies are now into their second half-yearly period, and already some signs of improved business are apparent. As the last half of the year is always more important to these companies from a profits standpoint than the first half, the directors are confident that the full year's dividends for both companies will be earned and paid. The various plants of the two companies are declared to be operating on a more efficient basis today than ever before.

Despite the fact that sales of newsprint and sulphite were 14.5 per cent less than in the previous fiscal period, the report of Spruce Falls Power and Paper Co. for the year ended April 30, 1931, showed bond interest earned 1.94 times, as compared with 2.52 times in the previous year. No reduction was made in dividends paid on the first and second preferred stocks, which are privately owned. The sole public interest rests in the 5½ per cent first mortgage serial bonds, of which there are $14,000,000 outstanding.

Walter M. Ross has taken over the duties of secretary of the firm of J. R. Booth, Ltd., of Ottawa. Mr. Ross, who is highly regarded throughout the forest products industry in the Dominion, has been connected with the Booth organization for the past 33 years.

A painful accident happened to W. B. Christie, general superintendent of the Hinde and Dauch Co., Toronto, last month, when he had the misfortune of breaking a collar bone while working at an elevator.

The Liquid Fibre Co., Toronto, is reported to be planning the early erection of a new local plant to cost over $50,000 with equipment.

MANITOBA

Plans for the investment of $30,000,000 in water power development, in establishing pulp and paper mills and in building a railway line north from Gypsumville to Grand Rapid, and thence to the railway of Churchill, have been under discussion recently between the Provincial Government and a representative of powerful financial interests in Chicago. The proposed plan would involve the development of a huge power project either on the Dauphin river or at Grand Rapid, construction of pulp and paper mills in the inter-lake area north of Gypsumville, and the building of a direct rail line linking Winnipeg and Churchill.

BRITISH COLUMBIA

Westminster Paper Co. Installs Printing Press

The Westminster Paper Co., which was financed early in 1930, is operating at capacity, 24 hours a day. Orders are being maintained at a satisfactory level and for sometime this year the plant was two months behind in orders. Both export business and local business is stated to be increasing. Net profits in June are reported at $3,162 after payment of bond interest and all other fixed charges. The net profits for the six months ended June 30, 1931, are placed at $36,438.

The company has now installed its own printing press to be used in connection with the production of paper com-

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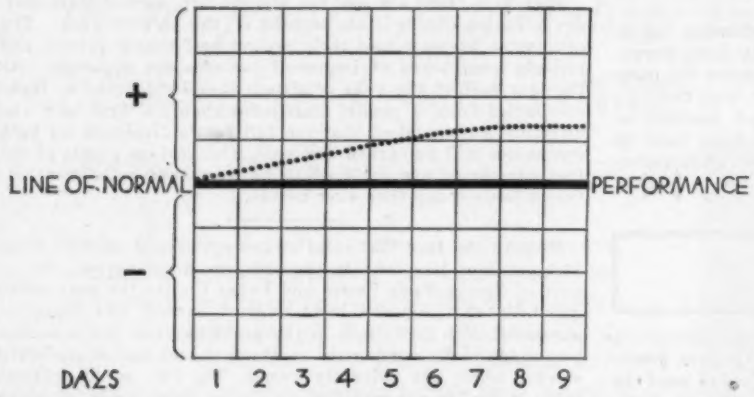

With perfection as the goal, makers of fine linen bonds and ledgers, wedding texts, parchments and other fine papers, find in Kenwood Felts those qualities which assist in approaching the ultimate.

Kenwood Felts possess the smooth, uniform surface and the couching qualities that are vital to the maintenance of the highest standards. Clothing the machines throughout with Kenwood Felts produces that teamwork of one felt with another that is just the added factor to make the whole picture of efficiency.

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Kenwood pioneered the one-sided board felt. The same research service developed and perfected the patented Kenwood tanning processes which protect the felt from the deteriorating effects of acids.

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modities manufactured by the firm. The new machine is of two-color, high-speed Kidder type and considerably larger than the initial installation at the plant. It was installed specially to handle the fruit wrap business developed by the company, and has a capacity of between 400,000 and 500,000 wraps an hour.

The Powell River Co. is now negotiating for the purchase from the United States navy of the hull of the dismantled cruiser "Huron," which if the negotiations are successful, it is intended to use as part of the company's breakwater. Early this year, the hull of the dismantled United States cruiser "Charleston" was purchased for the same purpose.

The statement of Pacific Mills, Ltd., for the 16-month period ended April 30, 1931, showed net profits of $625,267, which compares with $356,563 in the calendar year 1929. Operating profits totalled $2,382,798. After provision for all charges, including preferred dividends, there remained $445,510, applicable to the 75,000 common shares of $100 par value outstanding, which is equivalent to $5.94 a share. The company is expanding its operations through erection of a paper specialties plant in Vancouver.

❖ NEW BRUNSWICK ❖

Reduction in stumpage rates for the logging season 1931-32, effective on August 1, 1931, has been announced by Hon. L. P. D. Tilley, Minister of Lands and Mines for New Brunswick. The Government in taking this action is following the course adopted last year in order to stimulate activity in the lumbering industry in New Brunswick. The reduction is to be put into effect provided that assurance is received from the Federal Government of satisfactory assistance in bearing the loss of revenue which is thereby occasioned to the Provincial Treasury.

According to A. E. McLean, vice-president and general manager of the Bathurst Power and Paper Co., the Bathurst mill is the first in Canada to produce kraft fourdrinier board, which consists of liner board for the exterior of boxes and corrugated board for the interior of the boxes. The first shipments of this product were recently made from Bathurst to Montreal, Toronto and London, Ont. The mill is employing 150 men more than at this time last year.

Hugh Mackay, resident director of W. C. Pitfield & Co., in St. John, has accepted the appointment of director of lumber sales of Fraser Companies, Ltd. Prior to joining the Pitfield organization, Mr. Mackay had long experience in the lumber trade. The new connection does not involve any changes in his association with W. C. Pitfield & Co.

❖ NOVA SCOTIA ❖

Annual Report of Mersey Paper Co.

Report on the first full year's operation of the Mersey Paper Co. showed bond interest met, with a substantial allowance for depreciation, and earnings sufficient to meet dividends on the cumulative preference shares. Gross profits for the year were $852,921, at a time when an intensive campaign was necessary to introduce the company's product to the market in the United States. The reserve for depreciation accounted for $240,000 of the gross earnings; interest on funded debt and other loans for $440,220, leaving net earnings of $172,701.

The directors consider the results as satisfactory, particularly in view of the fact that the statement reflects the first year of the company's operations, and that throughout the year the newsprint industry was passing through a period of abnormal depression.

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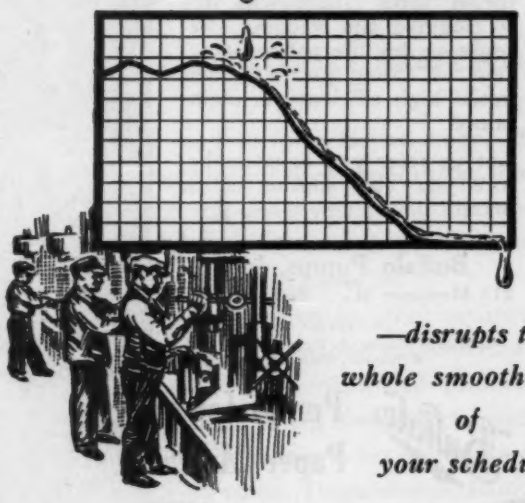

—disrupts the whole smooth flow of your schedule

A day to go...a job to finish...goods to be shipped. Perhaps a freight car waiting on the siding. A pair of bearings seize; machines are stopped; the whole smooth flow of your production schedule is suddenly disrupted.

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It *can't* happen with Houghton's Absorbed Oils in the bearings.

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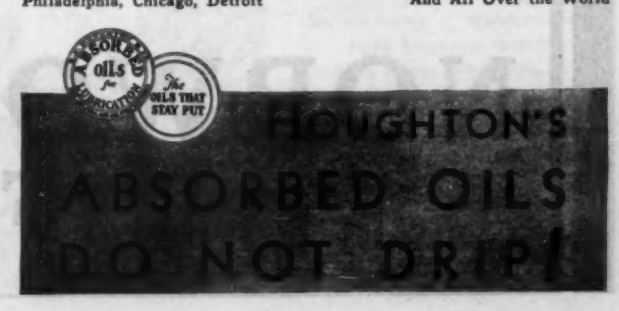

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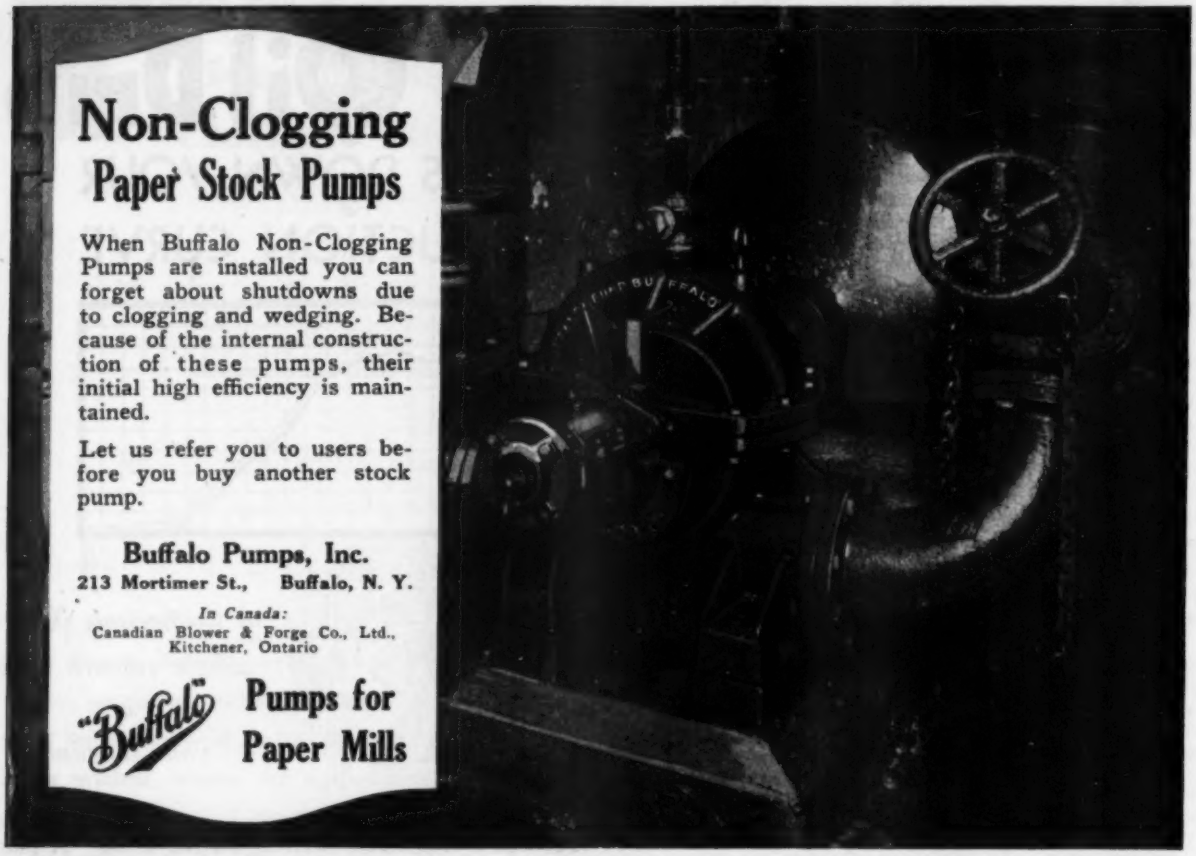

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ENGLAND

It has been suggested that the British paper industry should once again be the first to demonstrate the practicability of standardization measures, by reducing the bewildering number of fancy names given to colored papers by different makers. Although the conference called by the American Department of Commerce with the object of compiling a basic standard of prices for stock papers ended in a deadlock, there are many in the British paper industry who consider that there is no reason why this should be quoted as an argument against a similar attempt in this country. The position is equally chaotic in regard to printing inks, and it has been suggested that the ink makers, papermakers, and printers who are members of the Printing Industry Research Association should get together and consider some means to the end of color standardization for both paper and ink.

The committee elected last March to prepare a scheme of rationalization for the esparto paper industry has issued its report. Among the proposals is one that a holding company should be formed to acquire the esparto paper mills in Great Britain. It is considered that such an amalgamation would effect great economies in the purchase of raw materials as well as in operating costs. It would also permit of a reduction in stocks and a co-ordination of selling methods.

Sir Stephen Killik J. P., the chairman of the Colthrop Board and Paper Mills, Ltd., presiding at the 13th annual general meeting, said that the trading profit for the year was about £1,400 lower than last year, and the amount received from interest and discount was about £750 less, but in view of the exceedingly difficult conditions prevailing, he considered that the results were a matter of congratulations, and reflected great credit upon the management.

British papermakers are extremely interested in the report signed by a consultant on development to the Commonwealth Government, and by the chief of the Forest Products Scientific and Industrial Research Department on the possibility of making paper on a really large scale in Australia.

The monthly Board of Trade returns clearly indicate the importance of this market to British paper manufacturers. In 1929 our exports of printings and writings reached the highest figure on record—an average of 9,500 tons per month, and about 114,000 tons in the whole year. Owing to trade depression there has been a big falling off since then, and last year the average monthly exports were only 8,500 tons. This year there has been a further decline, but the imports from other countries have declined to an equal or even greater extent. In the last quarter of 1930, the total value of paper and stationery imported into Australia was £977,765, and of this total British exports were valued at £575,300, or 60 per cent of the whole.

W. A. Fink has been appointed treasurer of the Toledo Scale Company, subsidiary selling organization of the Toledo Scale Manufacturing Company, Toledo, Ohio. Mr. Fink has been associated with the Toledo Scale organization for over 13 years as head of the Sales Accounting Division, and assistant treasurer.

W. C. Bruton for many years a sales engineer working from the Oakland, Calif. office of the American Manganese Steel Co., Chicago Heights, Ill., has been appointed district sales manager for the Pacific northwest territory comprising Oregon, Washington, British Columbia and the Coeur D'Alene district in Idaho. Mr. Bruton's headquarters will be at 411 Colman building, Seattle, Wash.

TITANOX-B

(Barium Base)

improves the opacity of "super" and coated stocks

IN their search for a better means of improving the opacity of paper stocks, leading manufacturers are investigating the superior characteristics of Titanox-B (Barium Base) as a filler and coating material.

Among the properties which recommend its use in modern paper manufacture are exceptionally fine particle size; remarkable whiteness; high tinting strength; chemical inertness; high refractive index and moderately high bulking value. These characteristics of Titanox-B are proving helpful in improving paper quality, particularly from the standpoint of opacity.

Titanox-B is a true composite, opaque pigment—a white, fine, uniform powder consisting of titanium oxide precipitated upon and coalesced with barium sulphate (blanc fixe).

In some cases it has been found desirable to use Pure Titanium Oxide (TiO_2)—another of our products—instead of Titanox-B. It will be well worth your time to investigate Titanox pigments. Get in touch with our nearest branch for further information.

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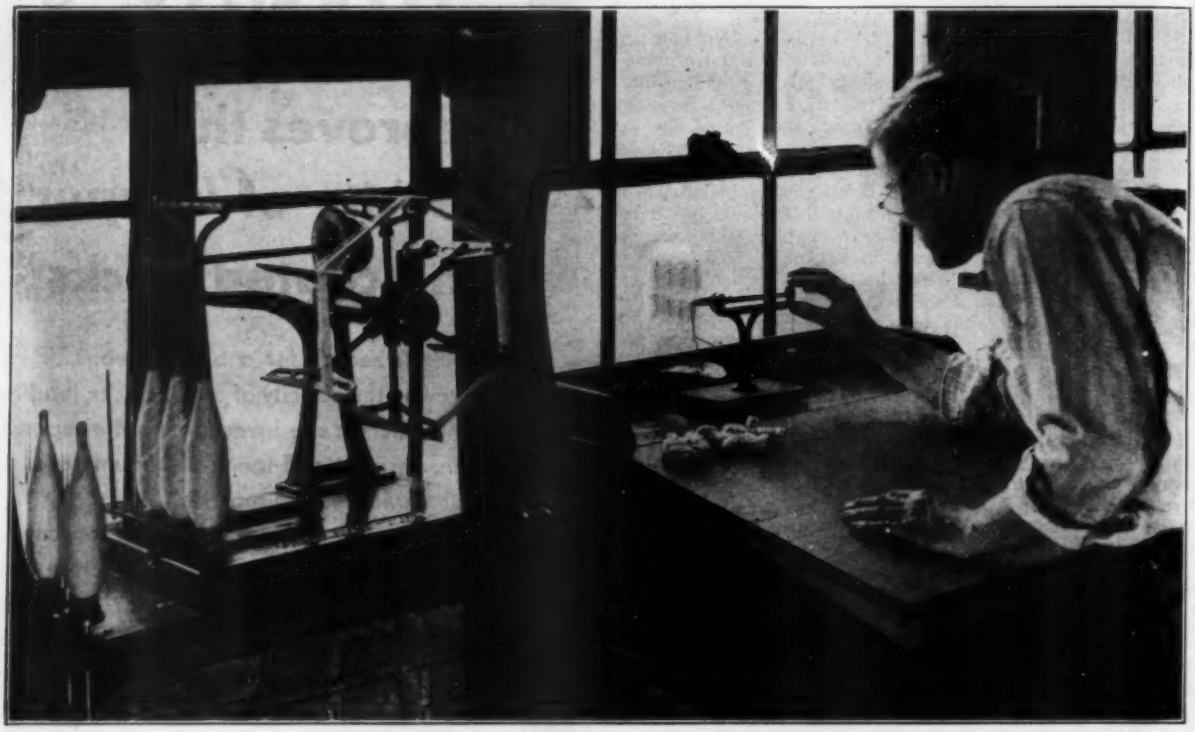
HOW VALUE IS ASSURED IN EVERY HAMILTON FELT



In the hand of accuracy, always . . .

THERE is a constant check for exactness throughout the entire manufacture of a Hamilton Felt.

Samples from practically every spool of yarn are weighed on a grain scale so as to be sure that there is uniformity in the yarn. Uniformity in the yarn assures uniformity in the thread.

Again, samples from every spool of thread are also weighed in the same way. In a set of bobbins, weighing about 50 pounds, only a two per cent of variation up and down, is permitted.

The importance of this exactness is easily recognized. Uniformity in the yarn and thread means uniformity in the felt.

Uniformity in the felt means smooth, even running on the machine, even wear of the felt, a longer life, no shrinking or stretching on the machine . . . and naturally a better sheet of paper.

A comparison of the check sheet of a machine with a Hamilton Felt and one with an ordinary felt soon shows the difference. The accumulated experience of three generations enters into all that Shuler and Benninghofen makes.

SHULER & BENNINGHOFEN, Hamilton, Ohio

Miami Woolen Mills, Established 1858

Hamilton Felts

Hamilton Felts are marked by two blue lines full width of the felt and by one shorter blue line midway between them.

NEW ENGLAND

Warren Offers New Papers

Three new lines of coated printing paper were officially placed on sale by distributing merchants of the S. D. Warren Company last month. The new papers and their prices follow a well defined trend in industry. They embody the characteristics of two or more papers of the old Warren line and thus not only simplify for the benefit of the merchant and manufacturer, but enable the printer to carry one paper for dual purposes.

The new Cumberland Gloss which replaces Artfold and Cumberland coated is the first new paper. The second is Olympic Gloss, which takes its name from the pulp company on the Pacific Coast from which comes the present supply of bleached sulphite pulp used by the Warren mills. The third new paper is the New England Gloss, a very low cost mill brand sheet in white only. The former papers are offered in white and ivory.

Ticonderoga Pulp & Paper Co. have added John Carter & Co., one of Boston's leading merchant houses to their list of distributors for Ticonderoga Text.

Employment in 31 paper and pulp mills of Massachusetts during July dropped from 5,793 in June to 5,606 of whom 1,832 were on full time. There was an equally small drop in the employment in paper box plants.

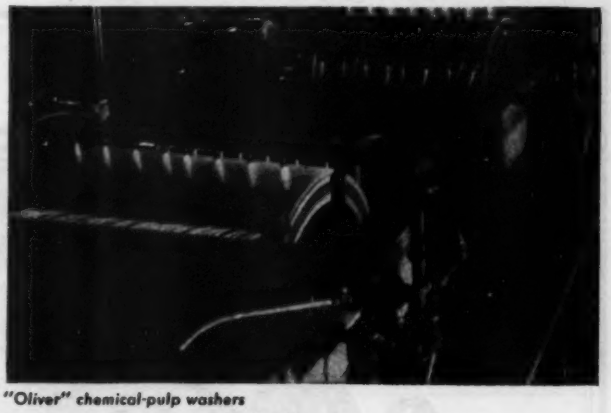
The State of Vermont is pointing the way to other New England states for methods of long range planning to insure the perpetuation of its industries, and its country life. Among the points which have been recommended by a commission and which will undoubtedly receive favorable attention from the legislature is the restoration of depleted forest lands to encourage the growing of timber for pulp and lumber industries. Better forest fire protection and acquisition by the state of more forest land as well as a more equitable system of forest taxation to prevent too early cutting are parts of the new policy.

The Merrimac Chemical Company, Everett, Mass., manufacturing papermaking and general chemicals is erecting a new alum process building as one of the newest units in its extensive construction program. The new building is of brick, two stories, and will cost $80,000. It will be completed about October 1. Work has also been started on a three-story bisulphite building which will contain 8,000 feet of space and will cost $100,000. A $35,000 addition to the research laboratory is also under way.

Important developments in the American Writing Paper Company sales campaign will be discussed by a mill merchant sales meeting at the Boston Chamber of Commerce on September 11 to be attended by executives and salesmen of Carter Rice & Co., leading sales service house, and representatives of the manufacturer including President S. R. Willson, Vice-President Russell Madden and Boston A.W.P. representatives E. Sussenguth and Ralph Day.

Edward P. Winchester, for many years with Storrs & Bement Co., Boston merchants, and of recent years a partner in the paper house of Gannett & Winchester, Boston, was drowned in Lake Sebago, Me., August 22. Mr. Winchester was 66 years of age. Services were held at his Boston home on August 26.

An indication of the condition of the book paper market is seen in the following offerings of standard mill brand sheets not seconds or jobs, quoted by leading merchants: A medium grade coated paper out of warehouse at 7.75 in cases, an-



"Oliver" chemical-pulp washers operating in a large modern kraft mill

Washing Chemical Pulps on Oliver United Filters

Performance of Oliver United Filters for thickening and washing chemical pulps has been so successful, that use of these machines is becoming standard practice. The kraft mills in the South, for example, now handle more than 75% of their pulp over Oliver United Decker-Washer-Save-All units. This multiple-duty saves installation costs, floor space, and reduces operating costs materially.

Pulp is so throughly washed on the filters that soda content is negligible; capacities on all chemical pulps are high; maintenance costs extremely moderate. After four years of operation, the original wire cover is still in good condition on an Oliver United Kraft Decker.

When these units are used as save-alls for white water fibre recovery further savings are obtained. In addition to recovery of stock, the clear water is returned for re-use on the showers; in one group of mills, ¾ of the filtrate from Olivers is re-used on the wire showers.

Let our engineers study your thickening and washing operations. Our nearest office is at your service.

OLIVER UNITED FILTERS INC

JOHANNESBURG Edward L. Bateman, Pty., Ltd.
TOKYO Andrews & George Co., Inc.
MELBOURNE Crosse & Duff, Pty., Ltd.
MANILA The Edward J. Nell Co.
FACTORIES: Oakland Cal., Hazleton, Pa., Peterboro, England
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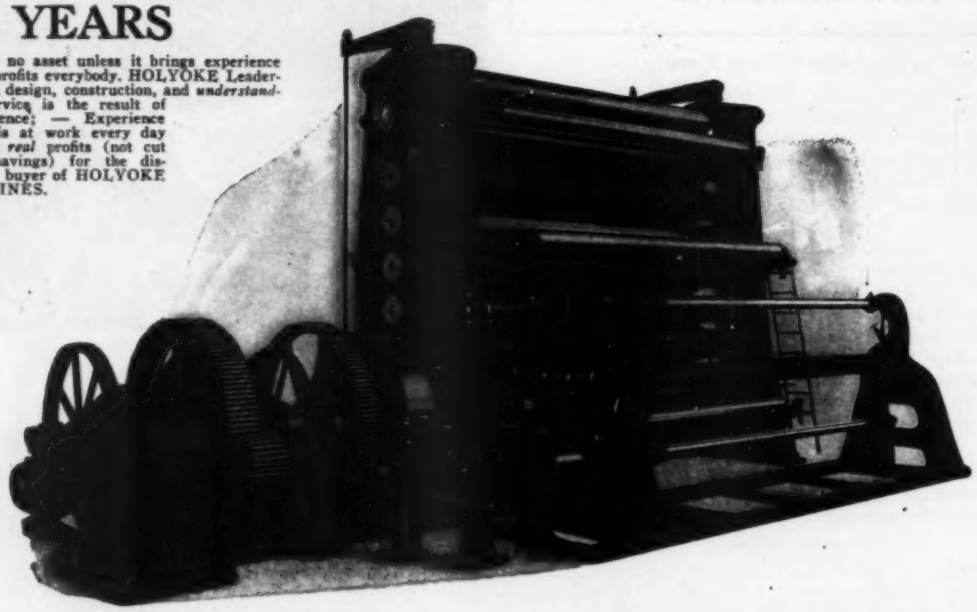
Age is no asset unless it brings experience which profits everybody. HOLYOKE Leadership in design, construction, and *understanding* service is the result of Experience; — Experience which is at work every day making *real* profits (not cut price savings) for the discerning buyer of HOLYOKE MACHINES.



HOLYOKE SUPER CALENDERS have been built by the HOLYOKE MACHINE COMPANY for 65 years

HOLYOKE Super Calenders stand the test of "your moneys worth." Let any experienced paper mill operator compare a HOLYOKE MACHINE COMPANY Calender with any other and ask him "honest injun" what *he* thinks. Experience is not earned overnight. It takes years of *practical*, understanding service to the paper industry to design machinery which will meet all special as well as usual conditions. When planning a purchase of equipment consult our Engineers,—get details on recent installations,—write

HOLYOKE MACHINE COMPANY
HOLYOKE, MASS.

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The HOLYOKE MACHINE COMPANY

FOUNDED 1863

other at 7 though of a lower grade, both western sheets. A western English finish book paper at 5.15 was purchased in ton lots by printers. Publishers bought carloads of machine finish, New England made at 4.50.

One organization that continues its meetings throughout the summer months is the Paper Section, New England Purchasing Agents Association. The August meeting was held at Stoneham, Mass., where Harold Holden, of Paper Makers Chemical Co., was host. The September meeting, on the 14th will be at Fitchburg, Mass. Golf follows a brief business session.

Returning from St. Louis, Arthur V. Howland, vice-president and general manager of Tileston & Hollingsworth Co., found more invitations. At St. Louis he presented the T. &. H. calendar for analysis by Laurance Siegfried, before the International Club of Printing House Craftsmen, at the New Jefferson Hotel. September and October meetings may be held in Philadelphia, York City, Pa., and New York if present invitations are accepted.

No Offer Yet Received for Wheelwright Mills

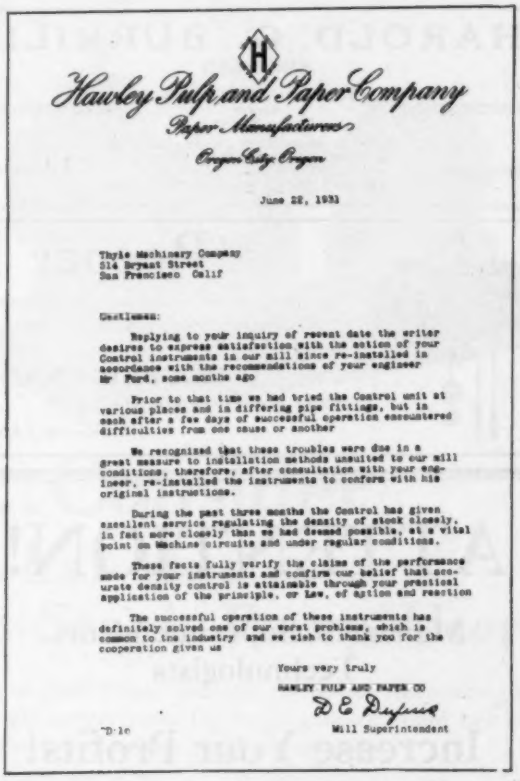
It is reliably reported in Boston that a western paper manufacturer has been inspecting the George W. Wheelwright Paper Co., mills now in receivership, but nothing regarding a formal offer can be reported at this time. Judge Lummus in the State Equity Court appointed George Wheelwright, Jr., Carl F. Woods, and George Alpert co-receivers of the property on August 11. In its decree, the court ordered the property to be operated for a period of four months, an accounting of assets and liabilities in full to be rendered within 40 days. The court permitted borrowing to $30,000 guaranteed by items receivable and required bond of $25,000 for the receivers. The difficulties of the Wheelwright Company were precipitated on August 1, when insufficient cash was on hand to pay employees. Furthermore interest on notes comprising accounts payable which were funded years ago could not be met. The notes total $477,000 and the current accounts payable were $218,000. The company had but $1,486 in cash. Counsel for the company in the receivership proceedings was Massachusetts Senator David I. Walsh, who asked the court to consider the plight of employees in requesting a period for further operations. Liquidation of the property is believed by many persons as inevitable. The plant has been under the general management of Carl Lincoln for some time past. Judge Lummus has enjoined the town of Hardwick, Mass., from holding an auction sale of the Wheelwright mill there, proposed in order to collect taxes.

Rising Paper Co., division of Strathmore Paper Co., have developed an interesting new low cost paper known as Red Lion Text, taking its watermark from a famed Berkshire inn. Its resale is 12.75 white and 13.50 colors of which there are a number of attractive shades.

Suit is pending in the Superior Court at Boston concerning the alleged mismanagement of funds of the Utilities Syndicate by Otis & Co., syndicate managers. Local persons are suing for an accounting, alleging that the syndicate totalling $11,933,000 was formed to acquire public utilities and water power properties. Instead says the plaintiff stock in Abitibi Power & Paper Corp., primarily a newsprint concern sufficient to give voting control was secured, also stock in St. Lawrence Corporation and International Power & Paper Corp., was acquired. Syndicate managers were alleged to have an interest in International and to be acquiring the other properties for their benefit. This was denied by the defendants in all particulars.

Complaint has been filed by the New England Paper & Pulp Traffic Association and the Paper Makers Chemical Co., against the recently increased rates on rosin sizing. Complaint was filed both with the Massachusetts Public Utilities

READ
What Users Say
of the
THYLE UNIT



Hawley Pulp and Paper Company
Paper Manufacturers
Oregon City, Oregon

June 22, 1931

Thyle Machinery Company
514 Bryant Street
San Francisco Calif

Gentlemen:

Replying to your inquiry of recent date the writer desires to express satisfaction with the action of your Control instruments in our mill since re-installed in accordance with the recommendations of your engineer Mr Ford, some months ago

Prior to that time we had tried the Control unit at various places and in differing pipe fittings, but in each after a few days of successful operation encountered difficulties from one cause or another

We recognized that these troubles were due in a great measure to installation methods unsuited to our mill conditions, therefore, after consultation with your engineer, re-installed the instruments to conform with his original instructions.

During the past three months the Control has given excellent service regulating the density of stock closely, in fact more closely than we had deemed possible, at a vital point on Machine circuits and under regular conditions.

These facts fully verify the claims of the performance made for your instruments and confirm our belief that accurate density control is attainable through your practical application of the principle, or Law, of action and reaction

The successful operation of these instruments has definitely solved one of our worst problems, which is common to the industry and we wish to thank you for the cooperation given us

Yours very truly
HAWLEY PULP AND PAPER CO
D E Dufresne
Mill Superintendent

"D"le

Greater efficiency of bleaching engines and jordans, plus a saving in chemicals. A uniform weight and caliper are but a few of the economies obtained with the Thyle Consistency Control Unit—and, it is easily installed requiring only a couple of pipe fittings and a few hours of time.

If you wish to control your stock automatically and increase the efficiency of your mill, write or wire for Bulletin No. 50.

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Paper Making Machinery
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For lifting paper rolls, removing calender rolls or raising Fourdrinier wires, use ROEPER Type "R" Electric Hoists—With or without Trolleys—Speeds up to 40 feet per minute—Send for Bulletins.

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One of the greatest funds of information on paper making ever published for the mill man.

Part I contains the first twelve lessons and two separate articles—A Problem in Head Box Control and The Degree of Hydration.

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Practical Helps for the Mill Man

A 48-page pamphlet made up of practical helps, many of which have meant considerable savings in paper and pulp mills. Of tremendous value to the practical man. Price 50c.

THE PAPER INDUSTRY
333 N. Michigan Ave. — CHICAGO, ILL.

Commission and the Interstate Commerce Commisson. It alleges that rates will be increased 35 per cent in some cases. All New England rates are now sixth class where until recently only Waterbury, Conn., (Kalbfleisch Corp.) were on that basis, rates from Stoneham and Holyoke being on commodity basis.

Meeting the demand for low priced papers, Groveton Paper Co. has introduced Gettysburg Ledger, a sheet selling at 9.75 in reams. It is watermarked and for large usage is attractively priced. It is recommended for factory forms and machine bookkeeping; it is made in white and buff.

For some time fuel oil has been relatively cheaper than coal. During August oil in tank steamer quantities was offered at 70 cents in Boston harbor equal to $2.80 per ton for coal, whereas the cheapest nut and slack is $4.25, straight slack $4 on cars. Paper companies, primarily oil burners in New England, include Falulah Paper Co., Eastern Manufacturing Co., Crocker Burbank Co., and Claremont Paper Co. Crocker Burbank can also burn coal, does so when it is cheaper. The new Maine Seaboard Paper Co. can switch from coal to oil when conditions warrant. Other companies have considered it. The expense of new installations and the uncertainty regarding the future oil price trend are factors. Great Northern Paper Company's traffic manager, A. P. Lane, threatened before the I. C. C. hearing on the 15 per cent increase at Portland that his company would switch its 160,000 or more annual coal consumption to oil if the increase became effective.

Claude S. Hartwell, well-known in the paper industry, has resigned from Carter Rice & Co., to enter the practice of law at 45 Milk street, Boston as of September 1. He began his paper trade career after the war with Crocker McElwain Co., later with Rourke Eno Paper Co., Charles A. Esty Paper Co., and Carter Rice & Co. He has written extensively on paper trade problems many of his articles having received considerable attention in the trade press. He contributed to the magazine "Direct Advertising" published by the fine paper mills through their Paper Makers Advertising Club.

Stephen P. Bumpus of Everett, Mass., Storrs & Bement Co., salesman for 34 years and well-known in the New England trade, died August 17.

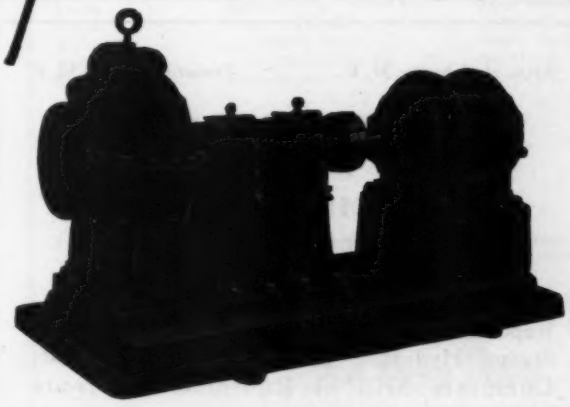
The aggregate of the late Garret Schenck's estate reported by the Bangor, Me., probate court was $3,099,858. Mr. Schenck was founder and president of the Great Northern Paper Co.

The old mill of the S. D. Warren Company at Yarmouth, Me., at one time used for soda pulp production but discontinued for some years, was destroyed by fire early in August. Most of the mechanical equipment had been removed.

Following discontinuance of the New York offices of Edwin Butterworth & Co., Inc., Boston dealers in and importers of paper mill supplies, it was announced that H. B. Sargent had been elected president, Gordon Emerson treasurer, and Herbert Hollis assistant treasurer.

The Brown Company deny in all particulars the allegations of Cooley & Marvin, Boston engineers, appraisers, etc., who have entered suit against the paper manufacturers alleging a commission is due them on the purchase price said to be $875,000 of the Cap. Magdalen Pulp & Lumber Co., in Quebec. It was bought say the plaintiffs with the information supplied by them as to extent, value, etc., of the properties. There is no written contract to that effect say the defendants and furthermore any such contract would be contrary to the public interest.

less power!



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Frederick Stock Pumps take less power. That is the primary reason why the list of Frederick users is a long and important one. Leading mills know what less power for pumping stock means!

There is another reason for the widespread use of Frederick Stock Pumps: They give uninterrupted service and Freedom from breakdowns. This has meaning and significance in terms of cash economies in Paper and Pulp Mills.

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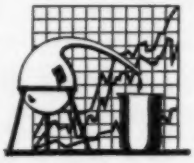

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STRUCTURES

NEW YORK CITY

B. Lindell, formerly secretary and treasurer of the Scandinavian Pulp Agency, Inc., and more recently associated with the Perkins-Goodwin Company in its pulp department, has joined the Jay Madden Corporation, of 100 East Forty-second street, New York, as director of sales for the pulp division of the Madden company. The Madden Corporation is sales agent in the United States for various Scandinavian pulp mills manufacturing the various grades of chemical pulps and ground wood. It has established connections with Ekman & Company, of Gothenburg, a firm which has been in business for over 100 years, as European associates.

The Major Paper Corporation is a new concern just entered the New York trade, with offices and warehouses at 259 West Tenth street, and chartered under New York State laws. G. Alfred Knoche, a man of wide experience and executive ability, is president of the new corporation, and Charles E. Mack, who for many years served as president of the Mack-Elliott Paper Company in St. Louis, Mo., and in late years in the same capacity with the Seymour Paper Company in New York City, is vice-president and manager. J. R. Williams is treasurer, and Herbert J. Simmonds is sales manager. The company will deal in a general line of papers for the printing trade and will handle the product of some of the leading mills in the country.

F. M. Van Horne has been appointed executive vice-president of the old-established paper house of John F. Sarle Company, Inc., of 50 Hudson street, New York, according to announcement by President Kit S. Warner. Mr. Van Horne has been with the company for 22 years. H. M. Condit has succeeded the late Mr. Wicks as cashier of the concern.

A. Robert Lowry, formerly with the Liberty Paper Company and more recently with D. S. Walton & Company, has joined the sales staff of the Tappen & Indruk Company, paper merchants of 260 West Broadway, New York.

Joseph H. Dow, formerly sales manager of the Eastwood Wire Corporation, is now sales manager of the Wire Department of Castle & Overton, Inc., 200 Fifth avenue, New York, importers of and dealers in wood pulp, rag stock and other paper manufacturers' supplies. The C. & O. Wire Department has just issued new price lists on fourdrinier wires and cylinder cloth.

The summer outing of the New York Association of Dealers in Paper Mills Supplies, Inc., on Sunday, August 16, was a huge success in every particular. About three score members of the Association and guests set sail from the foot of Cedar street, Manhattan, early in the day, and after the journey to Highland Gardens at Highlands, N. J., participated in a program of sports, including a baseball encounter between the New York and New Jersey contingents, which was won in the 11th inning by the New York boys, and foot races, potato, shoe and other novelty events. A sumptuous shore dinner topped off the day, with the crowd returning to the city in the late evening and bestowing thanks and praise on the Association committee for arranging the most enjoyable affair.

The New York offices at 1123 Broadway of E. Butterworth & Company, Inc., importers of and dealers in papermakers' supplies, have been permanently closed, and all business of the company henceforth will be conducted from the Boston offices at 136 Federal street, Boston, Mass.

John C. Standish, general superintendent of the Albany Felt Co., Albany, N. Y., is making a western tour.

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Water Tube Boilers for Every Service

BOILERS of high quality for central stations and industrial plants of all sizes, and for utilization of waste heat from kilns and furnaces. Steel construction only. Straight tube and bent tube types. Noted for long life and economy of operation.

Engineering service available—wire or write.

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Your investigation of the DELTHIRNA operation in these mills will convince you of its great savings and outstanding advantages.

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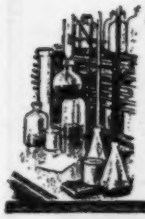
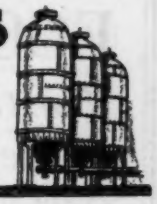


Technical Developments in the Paper Industry



Domestic and Foreign

The following abstracts are of the latest developments found in the foreign press and the domestic and foreign patent offices. Photostats and translations of complete articles and patents can be obtained at cost price.

Paper Machine Rolls

VARIOUS interesting points were brought out in a general discussion on paper machine rolls. It was pointed out that in the top press rolls there were two requirements which were antagonistic to each other, and therefore difficult to procure in the same material. The one was that there should be as smooth a surface as possible to impart the necessary flatness to the sheet, and the other that this surface should have the necessary interstices in a fine degree to allow the sheet to part without undue stretch and pass on to the next section. Granite seems to fulfill these requirements best. It was mentioned that trouble of crushing at the couch rolls was cured by the introduction of a larger diameter roll and of a rubber cover. The same effect may be secured by giving the top roll greater offset, thus making the nip more gradual. Reference was made to the covering of drying cylinders at the ends to prevent cockling. A certain amount of this trouble was due to the way machines were generally placed in buildings. The back of the machine might be close to a wall, while the front was more open, allowing much freer access of air which induced a difference of drying. Air led in systematically in a proper form of vapor absorption was a direct help to this trouble. It was also pointed out that staggering the rolls in a calender reduces to a considerable extent the pressure on the intermediate bearings. Theoretically, the bearings could be so placed that the pressure on them was nil. The point was also made that if the speed of the calender was altered so that it required more power of the thickness of the paper changed, or the pressure applied to the top roll altered, then theoretically the stagger on the rolls should be changed. It is difficult to stagger the rolls so that they would suit any paper put on the calender. The construction of the suction roll was also discussed, and many important practical points brought out. Anon. The World's Paper Trade Review, 1931, pages 1412ff.

Carbonization of Pulp Waste Liquor

THIS article gives a very thorough review of the technical situation of this practice. The various methods that have been proposed for this purpose are described briefly. Special attention is paid to the Rinman process, which is studied in considerable detail. Yields and conditions of operation are determined. It is concluded that the Rinman process is not commercially feasible. The discontinuous operation of the process in retorts is impracticable. Dr. Ernst Strupp. Der Papier-Fabrikant, 1931, Special Issue, pages 52 to 71.

Physical Qualities of Paper

THE author in this article is concerned with the determination of the opacity or the transparency of paper. Fig. 1, shown herewith depicts the relation between the transparency, density and opacity of paper, that is between the units used. The opacity of paper is measured with the aid of photometers. The principle of the instrument is as follows: Suppose it is desired to compare a paper (A) with a transparency of 1/10 with a paper (B) of transparency 1/100. The two pieces of paper are placed side by side in the photometer, as shown in Fig. 2 and they are illuminated by two sources of light (S) and (S') of the same intensity. These lights may be moved closer or farther away from the paper samples. When the distance of these lights from the samples is equal, then the paper sample which allows one tenth of the light received from (S) to pass through it appears to be lighter than the paper (B) which has the transparency 1/100 and which allows one hundredth of the light from (S') to pass through it. In order that the two samples of paper should appear equally illuminated, the source of light (S') must be moved closer to the sample (B) than the source of light (S) to the sample (A), or rather the distance (d) has a definite relation to the distance (d'), and in this particular case, the d^2/d'^2 ratio is equal to 10.

Various factors influence the opacity of a paper. The composition of the pulp is the first factor. Thus, mechanical pulp

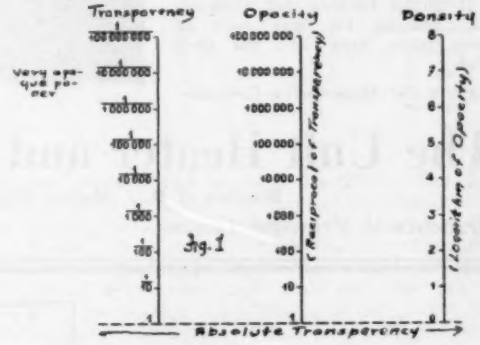


Fig. 1

and soda cellulose made from pinewood are, for example, pulps that give opaque papers, while bleached straw pulp and bisulphite pulps made from pinewood give papers that are more transparent. The filler used and the amount of the

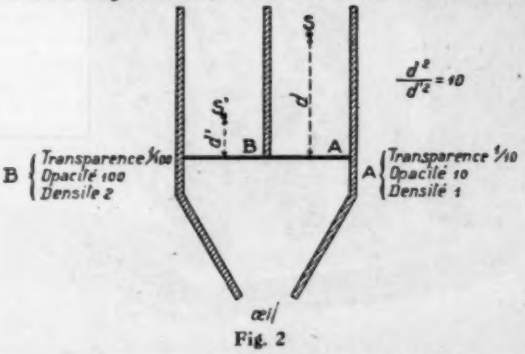


Fig. 2

filler are also important factors in determining the opacity of the paper. Beating diminishes the opacity of the paper and so does calendering which reduces the thickness of the paper and crushes the fibers. The sizing has an indirect influence on the opacity of the paper. A well-sized paper absorbs less ink and appears more opaque than a paper which is less impermeable but which may however be just as opaque according to the tests mentioned above. H. Micoud, Le Papier, 1931, pages 475 to 483.

Continuous Bleaching of Paper Pulp

THE feature of the process is that it is continuous and the materials, which are impregnated with the bleach liquor, are placed continuously on a loose form on a conveying device

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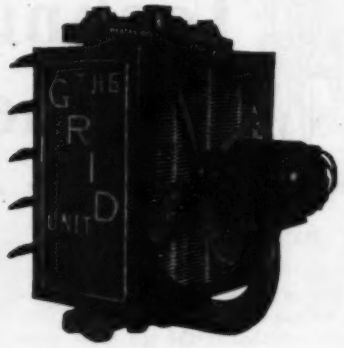

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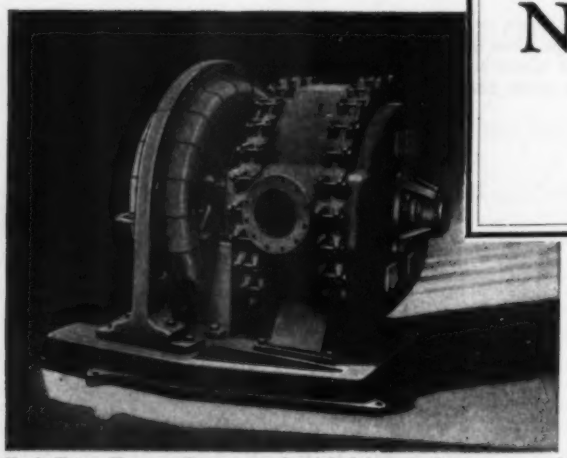

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which advances at a constant rate of speed. The apparatus is shown in section in Fig. 1 and in plan in Fig. 2. The vat (a) contains the products that are to be bleached and is located on a horizontal platform (b) which is mounted so that it can

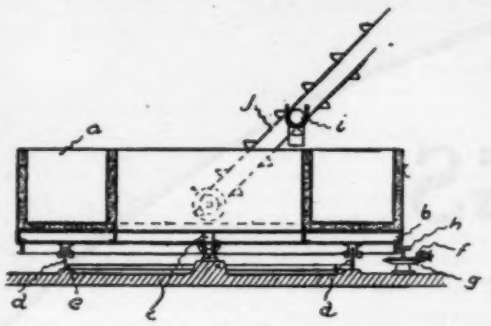


Fig. 1

be rotated about a central axis (c). The platform runs on a certain number of wheels (d) which rest on a circular rail (e). The power that is required to cause this movement is transmitted in suitable manner through the gear drive (f), (g) and (h). The devices (i) and (j) are provided for feeding the raw product into the bleaching apparatus and also for removing the bleached product after the operation has been completed. The apparatus (i) is a stationary tube, which opens out at a suitable point within the vat (a). This tube is provided internally with a conveying device of the endless screw type. It is also provided with an elevating conveyor (j) which is placed on the outside of the tube (the buckets are seen in Fig. 1) for removing the bleached product from the vat.

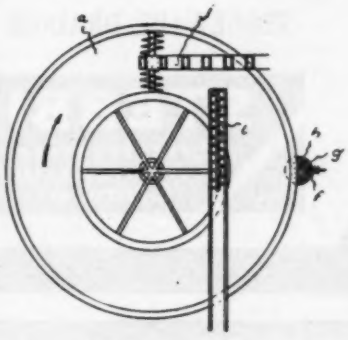


Fig. 2

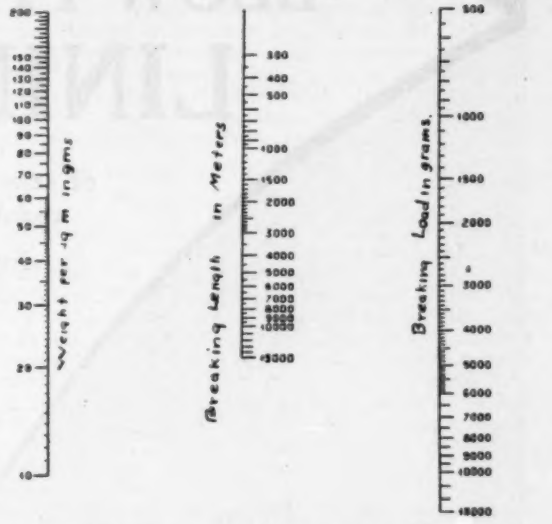
The mixture of the material that is being bleached with the bleach liquor is introduced continuously into the vat (a) which rotates and carries the mixture around with it until the mixture comes into contact with the elevating device (j) by which it is removed from the apparatus and then is subjected again to the bleaching operation. The final bleaching may be carried out in the ordinary beater. The temperature of bleaching is regulated by the addition of hot water. The speed of rotation of the apparatus is established by the duration of the bleaching. It is found that the bleaching is continuous, uniform, rapid, involves a minimum consumption of bleach, as well as of power, under these conditions. Emil Ekeberg. French Patent No. 700,381. March 16, 1931.

Bad Practice in Vegetable Sizing of Paper and Effect on Machine Wire

A STUDY has been made of the causes of the destruction and short duration of the machine wire and a connection was traced between this and the faulty sizing of the paper stock. One of the first things noticed was that when the paper pulp was incorrectly sized, there resulted a certain deposit on the wire which affected the proper dehydration action of the same. This resulted in longitudinal cracks in the wire and the durability of the wire was considerably reduced. The deposit of resinous matter on the wire stiffens it and thereby reduces its elasticity which is again a cause of the breaking of the wire and the formation of holes and cracks therein. It was found in such cases that there was free rosin present in the back water. There was accordingly a loss of rosin as well as trouble with the wire. Such loss of rosin takes place when there is too much free rosin present in the rosin soap. The faulty fixation of the rosin on the paper fibers is also to blame. V. Bouyer, Le Papier, 1931, pages 401-405.

Graphical Calculation of Tearing Length and Load

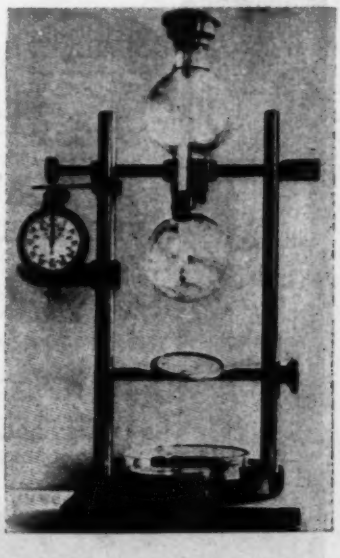
A NUMBER of graphical charts which are very useful in the calculation of the tearing length and the tearing load on paper is given in this article. The mathematics of the derivation of these charts is also discussed in detail. Instruc-



tions are also given on how to draw the charts. The chart, which is given herewith, is used to calculate the tearing length when the weight per square meter and the tearing load in grams is known. The tearing length is then obtained in meters. The use of the chart is simple. The weight per square meter is located on the left hand scale and this point is connected with the tearing load located on the right hand scale. The point of intersection of this line with the middle scale gives the tearing length. A circular chart is also constructed. H. Micoud. Le Papier, 1931, pages 363 to 371.

Penetration of Printing Ink and Sizing Quality of Paper

THE apparatus that was used in this investigation is shown in Fig. 1. It consists of two glass bulbs which are connected with one another. There is an opening in one bulb which is provided with a screwed-in metal piece in which the sample of paper that is to be tested is placed. This bulb also has fused to it a glass tube which sticks into its interior and which is measured off according to a scale. A thermometer indicates the temperature of the experiment and an open glass connection to both bulbs serves to equalize the pressure. The entire apparatus is mounted in metal supports in such a manner that it can be rotated. When the closed bulb is at the bottom, then ink, varnish or the like is filled in and the paper is placed in position. When the bulbs are rotated through an



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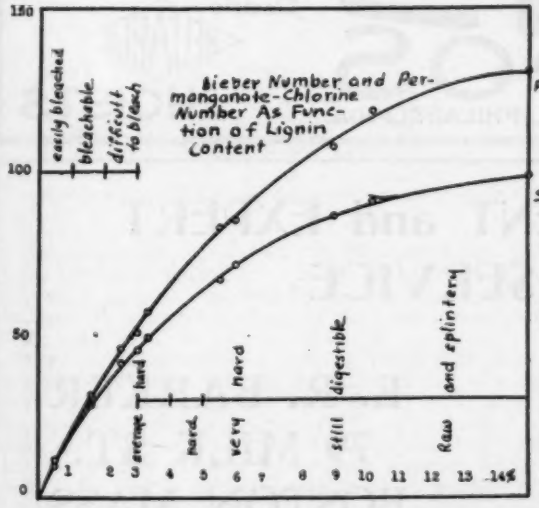
angle of 180 deg. then the liquid fills the cylindrical tube, the excess runs into the other bulb and does not therefore press against the paper. The height of the column of liquid which presses against the paper is therefore the same each time and hence the pressure is also constant. The penetration of the ink through the paper sample is observed by means of a mirror located at the bottom of the apparatus. Ten different papers were studied and the results tabulated. The first series of experiments was carried out with the purpose of determining the effect of the humidity of the air and the temperature of the ink on the time that is takes for the ink to penetrate through the paper. The results obtained by various testing methods were compared in this regard and found to agree well. Tests were also made with linseed oil, which were important because of the fact that the oil is an ingredient of printing ink. It was found that the results obtained with ink were very different from those obtained with linseed oil. It was established that the sizing quality of a paper, as judged from the amount of size used, gives false results in the case of printing paper. It is absolutely necessary in this case to make the test with linseed oil and to determine the degree of penetrability of the paper to the oil, which simply means the time in seconds that it takes for the linseed oil to pass through the paper. Dr. Dreschel. Der Papierfabrikant, 1931, Special Issue, pages 97 to 103.

Permanganate-Chlorine Consumption Coefficient for Determining the Degree of Beating of Pulp

THIS is a new method and is used to determine the degree of refining the pulp by rapid oxidation with permanganate in acid solution. The results are expressed in terms of



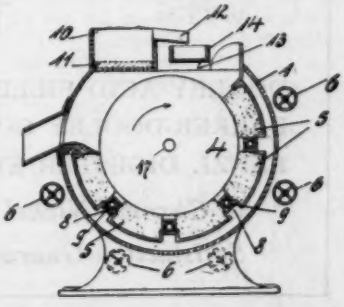
kilograms of equivalent chlorine per ton of the pulp. The solutions that are required for making this test are: first, a normal solution of sulphuric acid, a tenth normal solution of potassium permanganate, and third, a tenth normal solution of ferrous sulphate-sulphuric acid (Mohr's salt). The details of the method are given as well as of the form and dimensions of the apparatus, including the breaker and the agitator, that are used therein. The chemistry of the reaction is also worked out. Fig. 1 shows the shape of the Sieber coefficient curve and of the potassium permanganate-chlorine coefficient curve as functions of the lignin content of sulphite pulps. The new method is rapid, easy to carry out and accurate. Dr. Albert Kueng. Der Papier-Fabrikant 1931, Special Issue, pages 73 to 77.

The Reducing Action of Waste Liquors

THIS article is particularly concerned with the sulphite digestion of pinewood. It is concerned with the presence of impurities in the liquor due to the presence of various metals in the sulphided starting materials, such as pyrites, used in the production of the liquor. A number of series of experiments were carried out to determine the effect of sulphur, of calcium sulphate, seleneium dioxide, the basic portions of the digestion liquor, arsenic trioxide, flue dust and lead sulphate on the digestion of the pulp, when these substances are added to the digestion liquor. Selenium is a special case in that this metal causes the catalytic decomposition of the calcium monosulphate in the sulphite digestion liquor into sulphate and free sulphur, which has a material effect in changing the composition of the liquor. This change is the cause of the strong hydrolytic action on the higher sugars, as the digestion experiments with digestion liquors of different percentages of combined sulphite showed. The basic part of the digestion liquor plays the important role in the production of higher sugar yields, which is connected with the initial concentration of the digestion liquor, the pressure in the digester and the temperature. Hugo Lauber, Der Papierfabrikant, 1931, Special Issue, pages 77 to 82.

Fine Grinding Mill for Mechanical Wood Pulp and the Like

THE operation is carried out with the aid of a new type of mill which has several bedplate stones arranged around the grindstone. The result is that the production of the apparatus is high while the power consumption is low, and furthermore the properties of the beaten or ground stock are improved. The mill is shown in the accompanying illustration. The shaft (17), which rests in the bearings of the housing (1), carries the grindstone (4), which is surrounded over most of its circumference by the bedplate stones (5), each of which can be moved in and out of place and adjusted by means of a hand wheel (6). The heating tubes (9) are built in between the individual bedplate stones (5) and the intermediate spaces or the intermediate pieces (8), and these tubes are used for additional heating of the ground stock. A heating plate (11) is built into the inlet box (10), which insures that the stock, that is to be beaten, is previously heated and thus passes over the overflow spout (12) in the heated state and then reaches the grindstone (4) after passing through the distributing box (14) which is made in the manner of a trough (13) with perforated sides and bottom. A to-and-fro movement is given to the distributing box. The grindstone is encased in a tight wooden frame over almost three-quarters of its entire circumference and this means over the distance through which it is surrounded by the bedplate stones, so that the beaten stock is not allowed to escape laterally between the bedplate stones (5) and the rotating grindstone (4). The heating of the stock that is being treated has the effect of loosening up the cohesion between the fibers. Not only is a beating action of greater effectiveness obtained in this manner, due to the fact that the bundles of fibers are loosened without shortening any of them, but there is also effected a considerable saving in operating power and an increase in the production of the machine is also brought about. Max Tamaschke, Herzberg, Germany. German Patent No. 520,423.



Relation Between the Chlorine Consumption and the Copper Number

A SERIES of experiments were carried out with the idea of studying the variation of the copper number during the bleaching process, so as to obtain a series of results which could be used as a basis for establishing a method for relating the consumption of chlorine in the bleaching process with the copper number of the finished product, or with the copper number that is to be obtained in the finished product from a given raw material. The experiments extended over a period of several months.

The results were shown graphically in a number of curves.

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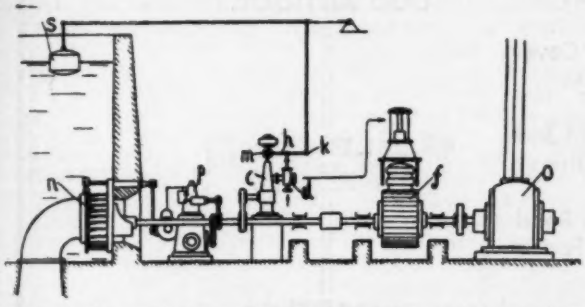
A formula was worked out and tables of results established for its application. If the time of bleaching, the consistency, the temperature and the alkalinity are maintained half way constant during the operation, then the desired effect will be obtained in the beater with a given quantity of chlorine as calculated beforehand. The properties of the pulp fibers will be more uniform than when the bleaching is left entirely in the hands of the operation to determine when to end it or not. It is found that under the aforementioned conditions there is very little after-bleaching required, which is of course highly economical as compared with the condition where in much after-bleaching has to be done to bring the color to the proper point. Details are given of the bleaching test that is made in a beater at a temperature of 35 degrees C with a pulp consistency of 7.5 to eight per cent. The test on the pulp is made every hour to determine the copper number. Dr. Erwin Fabrizi. Der Papierfabrikant, 1931, pages 361 to 367.

Economical Utilization of Power in Pulp Grinders

THE illustration shows the manner in which the various parts of the grinder installation are arranged for the performance of the grinding operation with the minimum consumption of power. It shows the use of a centrifugal force regulator together with a float regulator to control the grinding operation. In this installation a common water turbine (n) is employed to drive the grinder (f) as well as the electric generator (o).

The turbine is provided with a standard turbine regulator (p) which controls the regulating apparatus of the turbine



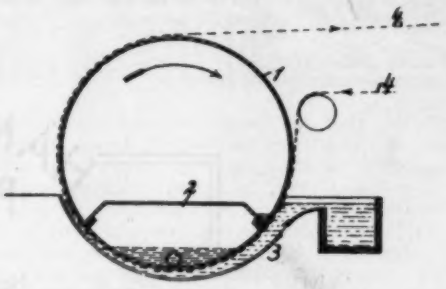
at constant speed of rotation. The pressure in the pockets of the grinder is controlled by means of the regulating valve (d), which is itself regulated on the one hand by means of the float (s) and on the other hand by a speed regulator (c) of the grinder.

If the inflowing operating water to the turbine decreases, then the level of the water in the tank will sink to a certain extent, and the float (s) will also sink and it will then close the regulating valve to a certain degree (d) by means of the crank arm (k) and the oscillating lever (h). The result is that the grinder (f) will receive less pressure within the pockets, its feed is decreased, the speed of rotation of the grindstone is increased and the turbine regulator (p) closes the regulating apparatus of the turbine (n) to a greater degree. The result is that a condition of equilibrium again sets in. In this operation (m) is the turning point of the lever (h). In spite of the change in speed, the turning point (m) does not shift its position, for the regulator (p) of the turbine is adjusted to higher sensitivity, and hence pre-regulates the grinder regulator (c). If the quantity of water fed to the turbine increases, then the reverse process takes place, but in every case the water fed to the turbine is utilized completely and the full drop of the water is available for conversion into power. The speed of rotation of the apparatus is maintained constant just in standard operation of a power plant.

If no electric power is required, then the regulation is accomplished in the same manner, or the turbine regulator (p) can be omitted. Then just the grinder regulator (c) will function. Then the turbine controlling apparatus will be adjusted by hand in accordance with the quantity of water that flows to it and the lever (h) rotates around the point (k). Amme-Luther-Werke Braunschweig der "Miag" Muehlenbau- und Industrie A. G., Braunschweig, Germany. German Patent No. 520,931.

Fourdrinier Paper Machine

THE new machine is provided with a suction cylinder with an endless wire which passes over this cylinder, in the place of the usual breast roll, etc. The machine is shown in

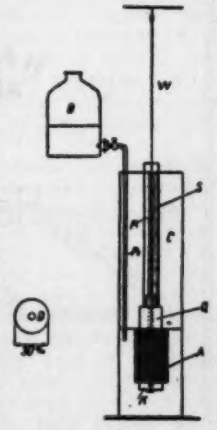


the accompanying illustration. The rotating screen (1) provided with a stationary suction chamber (2) which is located inside the former. The chamber of box covers a certain portion of the circumference of the cylinder in the lower part, which is subjected to the action of a vacuum which is produced in the usual manner. The lower part of the cylinder wire is surrounded by the stock trough (3), whose distance from the circumference of the cylinder decreases in the direction of the rotation of the cylinder wire. The metal cloth or wire (4) is shown on the cylinder (1).

The device works in the following manner: The stock is filled into the stock trough (3) and then a vacuum is produced in the suction chamber (2) and this vacuum is maintained. The water is drawn into the suction chamber by this means and the stock is deposited on the wire, so that a paper web is formed due to gradual disappearance of the water. When the wire cloth is brought right against the circumference of the cylinder, then the paper web is removed by means of the usual felt, or else it can be sucked sufficiently dry and then removed directly. Hermann Colombo, Pfullingen and the Firm Hermann Wangner, Reutlingen, Germany. German Patent No. 521,502.

Determining Degree of Swelling or Hydration in Pulp

THE instrument, with which this determination can be carried out, is shown in the accompanying illustration and its use described. A wire (W) is drawn through the thin glass tube (P_1), which carries a rubber stopper (K) at one end, this wire serving to suspend the apparatus. Discs of pulp (A) are located over the small tube and weighted with the weight (Q). A glass tube (S), graduated in millimeters, rests on the weight (Q), and this glass tube rises over the end of the tube (P_1) and serves for reading off the swelling or hydration of the pulp. The entire apparatus is hung in a cylinder (C), in which a sodium hydroxide solution of specific gravity 1.2 is placed. The swelling pulp lifts the weight (Q) together with the glass tube (S) upwards and the increase of volume can be read off at any time. Caustic soda liquor of like concentration is added during the course of the experiment from the flasks (B) through the tube (P_2), so that the pulp always remains covered with the liquid. The maximum amount of swelling is attained with this apparatus within a period of 15 minutes. The pulp sample is taken out of the solution after a period of one hour has elapsed, and it is removed from the apparatus after being allowed to drip for two minutes, and then it is weighed on watch glasses. The swelling is figured in percentage of the original length of five centimeters, and the absorption is expressed in percentage of the weight before the test. Anon. Der Papierfabrikant 1931, page 325.



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New York, September 1, 1931.

DESCRIBING the situation rather conservatively, it can be said that the market for paper has shown little or no improvement during the past month. Demand is still along ultra-reserved lines, with consumers, jobbers and convertees absorbing supplies only against actual and more or less direct requirements, and indicating very conclusively by their market operations that they are not in need of anything approaching normal amounts of paper and board. Nevertheless, there is a better sentiment within the industry, and paper manufacturers and merchants alike and with few exceptions are confidently expecting broader demand and an all-round livelier market following the Labor Day holidays.

August proverbially is a quiet period for the paper trade, and the last month was no exception whatsoever to this general rule. As a matter of fact, this August has been quieter than usually is witnessed. Not only have buyers, just about as a unit, confined their orders to bare necessities, but the dullness in general business has led to an additional contraction of paper demand. Mills in various parts of the country have had to curtail operations to a further degree, and it is doubtless safe to say that production of paper was at a lower ebb during the past month than has been known in a long while. However, the paper industry is not by itself in this condition. The dullness witnessed in this important manufacturing industry is not due to the situation within the industry but is simply in line with the business and industrial depression generally, and, as a matter of fact, there are indications that the paper industry is not suffering to the same extent as are numerous of the other basic industries of the country. Thus, if it is any consolation to the paper manufacturer and merchant, it can be stated that the quietness in the paper industry cannot be attributed to unfavorable factors affecting alone this one industry but is part and parcel of the situation existing in trade and industry generally.

Many members of the trade foresee a marked expansion in paper business as the autumn draws on. Emphasis is put on the extreme caution practiced by consumers and converters of paper in their purchasing in recent months, and the mere fact that they have "sailed so close to the wind" in acquiring supplies prompts paper men to anticipate a substantial broadening of demand. It is expected that many advertising campaigns will be inaugurated in the fall and early winter, which will result in a considerable increase in paper consumption; that converters who have kept their stocks of paper down to the proverbial minimum will procure more business and will of necessity be in the market for larger amounts of paper, and that the usual seasonal increase in retail and other business during the closing months of the year will lead to a much better demand for paper of various kinds.

In short, the feeling exists that there is a large potential demand for paper being accumulated, and that the moment consumers and convertees receive some little encouragement in the form of business expansion in their own fields, they will proceed readily to fill their paper requirements. And the belief is general that this encouragement will come in the near future. There are those—perhaps a big majority—who are dubious of the outlook insofar as expecting a definite turn around of the business situation, but nearly everyone looks for at least the customary seasonal stimulation of trade that occurs in the fall and winter, and it is believed that this seasonal upturn in business activity will be somewhat more on the favorable side this year than ordinarily.

Production of paper in the United States during June showed a slight decrease as compared with the preceding month, totaling 444,628 net tons of all grades, against 449,721 tons in May by identical mills, according to the monthly summary of the American Paper and Pulp Association. The total output during the first six months of this year reached 2,668,813 tons, contrasted with 3,009,591 by identical mills in the corresponding period of 1930, a decline of 11.3 per cent. The daily average of total paper production in the month of June last was one per cent under May this year and nine per cent under June, 1930. Shipments from mills during June aggregated 440,294 tons, against 450,311 tons in the preceding month, while stocks on hand at the end of June were 270,473 tons, compared with 268,991 tons a month before. The fact that mill stocks at the end of June this year were on almost the identical level as a year ago, when they totaled 270,066 tons, would seem to prove that manufacturers are keeping production within the bounds of actual requirements during the depression.

Production of newsprint in the United States and Canada during July amounted to 282,279 tons, or at 59 9/10 per cent of the rated capacity of mills, compared with 295,057 tons or at 62 6/10 per cent of capacity in the preceding month, and 319,818 tons or at 71 8/10 per cent of capacity in July last year, according to statistics issued by the News Print Service Bureau. United States mills produced 99,548 tons in July, against 101,086 tons in June last and 102,840 tons in July a year ago, while the output in Canada was 182,731 tons in July, contrasted with 193,971 tons in the preceding month and 216,978 tons in July, 1930. Newsprint production in both countries in the first seven months of the current year was 2,014,378 tons, or at 61 9/10 per cent of capacity, against 2,292,354 tons or 74 8/10 per cent of capacity in the corresponding time of last year, and lower than in the like period of any year since 1925 when only 1,753,889 tons were produced in the first seven months of the year. Stocks of newsprint at United States and Canadian mills at the end of July totaled 80,904 tons, or 4½ days' average output, compared to 73,738 tons a month previously, and 82,146 tons on July 31, 1930.

Paperboard production in the United States in June totaled 209,186 net tons, contrasted with 224,770 tons in the preceding month, and 221,525 tons in the same month last year, making a total for the first half of 1931 of 1,307,980 tons, against 1,382,215 tons in the similar period a year ago, according to U. S. Department of Commerce figures. Board mills had unfilled orders for 47,893 tons of board at the end of June, compared with 46,680 tons a month before. Shipments of board from mills during June aggregated 211,540 tons, against 225,977 tons in the preceding month, and stocks at mills were 78,223 tons at the end of June, compared with 80,577 tons a month previously.

Prices of paper are developing rather limited definite change. Manufacturers are exerting every effort to maintain market levels, and they seem to be meeting with a fair degree of success. However, as would be expected under prevailing circumstances, there is some price-shading by those eager for orders. Newsprint is moving into consumption in a steady manner though in reduced tonnage, with no alteration of contract or transient quotations of mills. Wrapping paper is exhibiting fair price steadiness, and so are fine papers, more especially the high-quality lines of bonds and ledgers, though some of the cheaper grades of fine papers are a little lower quality. Tissue has been in slow demand but adhering to previous price levels. Book papers are on about last quotational levels, with slight concessions obtained by buyers in some quarters. Boxboards are holding to unchanged prices, with reports of certain mills endeavoring to get a little more for board.

According to announcement by J. L. Fearing, vice-president and sales manager, E. L. Crooker, who recently joined the sales department of the company, has been elected a vice-president of the International Paper Company, of New York.

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Papermaking Rags

The summer season is proverbially a quiet period for papermaking rags, as paper manufacturers usually let down in their purchases of raw material during the vacation and hot weather months, but the market for rags in recent weeks has been far slower than ordinarily is witnessed at this time of the year. In fact, judging from reports of rag dealers in various parts of the country, it might accurately be stated that almost no market has existed for many grades of papermaking rags, and that even those few kinds of stock that have moved have been wanted only in a very limited way.

The rag market has reflected to a pronounced degree the dullness in the paper trade, particularly as affecting the high qualities of paper into which rags go chiefly in the manufacturing process. There has been, of course, a certain amount of routine business right along, but demand for rags from paper mills has been so exceedingly restricted that it has appeared at times as if paper manufacturers are no longer utilizing rag stock as a raw material, and dealers in rags have become noticeably discouraged and are beginning to ponder on whether the rag market is ever "coming back."

Obviously, under such conditions, prices of rags have been and still are altogether in favor of buyers. True enough, market quotations on certain grades are fairly well maintained, but this seems due more to stringent supply circumstances than to any worthwhile call from consuming quarters for material. The fact should not be lost sight of that some descriptions of rags, notably new cuttings and for that matter some of the grades of old rags as well, are not being produced in anything approaching normal volume in these days of depression, and dealers who have the scarce rags in stock are inclined to hold fairly firmly for the prices which they regard as reasonable while probably facing difficulty in replacing such rags if sales were made.

Moreover, the feeling is crystallizing within the rag trade that as the autumn draws on and paper mills become busier and need larger amounts of raw material, they will come into the market to acquire more rags, with the likelihood that prices will rise. Certainly, it is argued, some grades of rags cannot continue to sell at prevailing figures under any semblance of a normal demand from papermakers. Collections of old rags all over the country have been curtailed to a minimum—even below a "minimum," as some members of the trade express it—and accumulations in the hands of packers and dealers are unusually small despite the slow movement into consuming channels for some time past. Also, and dealers put much emphasis on this phase of the situation, imports have decreased to almost nothing; there is, firstly, so little call for foreign rags that importers are not bothering to bring in supplies from abroad, and, secondly, dealers in Europe are in a great many instances refusing flatly to accept the prices bid them from the United States. All of which prompts rag traders to believe that the market is shaping up to where any broadening of demand whatever will surely effect an enhancement of market values.

Domestic roofing rags constitute about the most active grades at the moment, and the movement of such rags to mills have been fairly consistent if in limited tonnage. Felt manufacturers apparently are filling their needs within certain price limits, but it is generally admitted that available supplies of roofing stock are anything but plentiful and that it would not require much additional demand to send values upward. No. 1 roofing stock is bringing around 80 cents per hundred pounds f.o.b. dealers' shipping points, and No. 2 classification stock 50 to 60 cents. Foreign roofing is neglected by mill buyers, and prices are largely nominal.

Some few grades of new cotton cuttings, principally those light colors easily bleachable, are being sold in small quantities, though prices of most new cuttings are very uncertain. In fact, it is problematical at just how low consumers can buy certain grades. Old whites and thirds and blues are in little demand, with quotations about holding their own though exhibiting an easing tendency. Foreign rags of every description are extremely dull, and entirely nominal in price.

Average quotations f.o.b. shipping points and ex dock New York, many of which should be considered as strictly nominal, are as follows:

New Stock	New York and Chicago
White shirt cuttings, No. 1	6.25– 6.75
White shirt cuttings, No. 2	4.00– 4.25
Fancy shirt cuttings	2.25– 2.50
Washables, No. 1	2.25– 2.50
Unbleached muslins	6.75– 7.00
White lawns	5.50– 5.75
Overall cuttings, blue	5.00– 5.25
Black silesias	3.00– 3.25
Canton flannels, bleached	6.00– 6.25
Canton flannels, unbleached	5.00– 5.25
Shoe cuttings, bleached	5.25– 5.50
Shoe cuttings, unbleached	4.00– 4.25
Light silesias	4.75– 5.00
O. D. khaki cuttings	4.25– 4.50
Mixed khaki cuttings	3.75– 4.00
Corduroy cuttings	2.75– 3.00
Cottonade cuttings	2.25– 2.50
Linens, No. 1 white, foreign	7.50– 8.00
Light prints, foreign	2.75– 3.00
Old Stock—	
Whites, No. 1, repacked	4.25– 5.00
Whites, No. 2, repacked	2.00– 2.50
Whites, house soiled	2.00– 2.25
Whites, street soiled	1.75– 2.00
Thirds and blues, rough	.70– .90
Thirds and blues, repacked	1.25– 1.50
Lace curtains	3.00– 3.25
Black stockings	2.50– 2.75
Cotton canvas, No. 1	3.25– 3.50
White cotton batting	1.00– 1.25
Roofing, No. 1 (cloth strippings)	.75– .85
Roofing, No. 2	.50– .60
Linsey garments, foreign	.90– 1.00
Dark colored cottons, foreign	.70– .75
Blue linens, foreign	2.75– 3.00
Gray linens, foreign	3.00– 3.25
White linens, foreign	5.00– 5.50
Light prints, extra foreign	2.00– 2.25

Rope and Bagging

Scrap bagging is favored with a moderately good demand from paper mills, whereas old rope is still in a very dull market position. No. 1 scrap burlap is chiefly wanted by manufacturers and is reported worth in the vicinity of 1.25 cents a pound f.o.b. shipping points, though prices of any description of papermaking material these days are subject to various question marks, depending more than usually on the quality of the material involved, the eagerness of the seller to dispose of accumulations, and the pressure exerted on the consumer to buy. Roofing bagging also is in fair movement in some directions, whereas old gunny bagging is quieter than it was.

It is almost anybody's guess what prevailing market prices of old rope are. Dealers and importers are endeavoring to procure 1.75 cents per pound for No. 1 old manila rope, but there have been reports of purchases by mills at lower figures —down to 1.50 cents a pound. Rope paper mills appear to be

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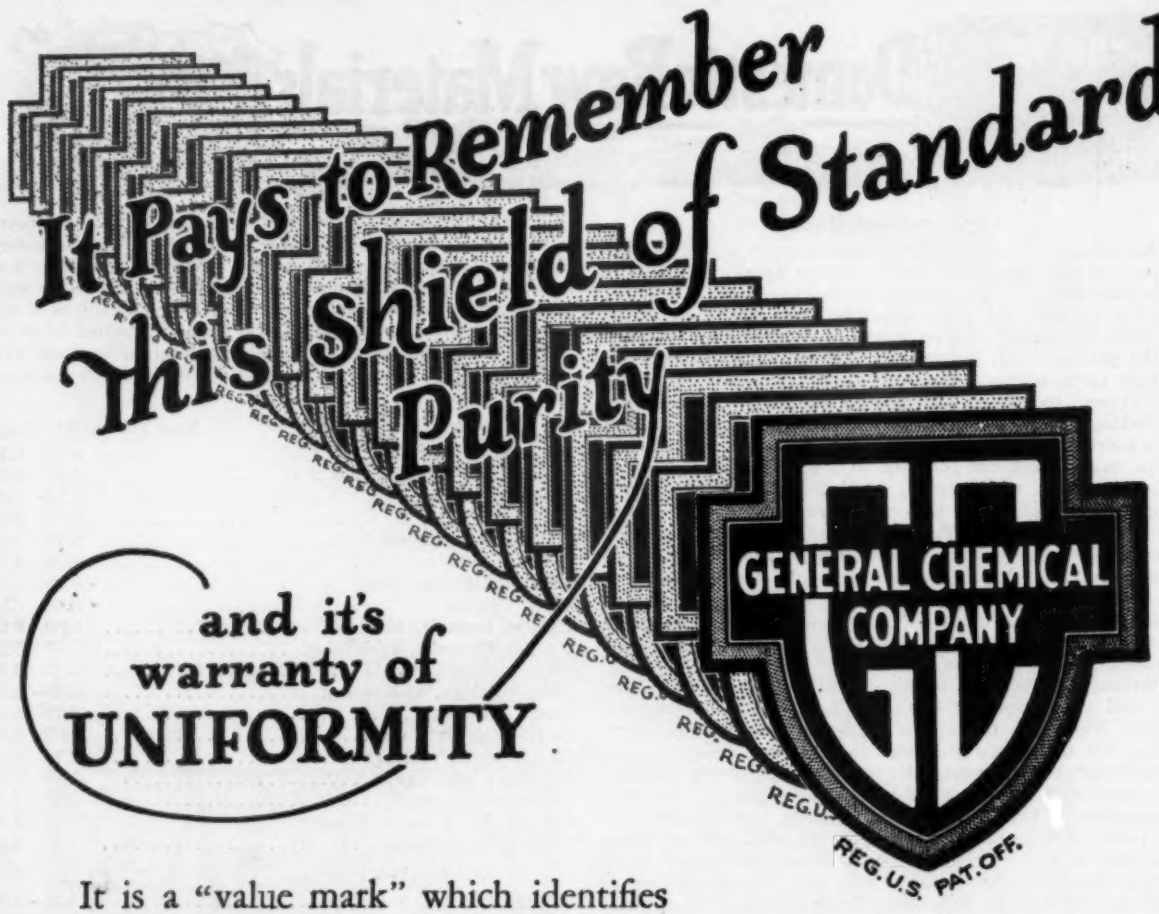

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amply supplied, and in no mood to add to their stocks; demand therefore is very slow and prices are mainly nominal.

F.o.b. shipping point and ex dock New York quotations follow:

Gunny, No. 1 domestic	1.50– 1.60
Gunny, No. 1 foreign	1.50– 1.60
Scrap bagging, No. 1	1.20– 1.30
Roofing bagging	.50– .60
Wool tares, heavy	1.40– 1.50
Wool tares, light	1.30– 1.40
Manila rope, No. 1 foreign	1.50– 1.75
Manila rope, No. 1 domestic	1.50– 1.75
Sisal strings	1.25– 1.50
Mixed strings	.65– .75

Old Paper

A distinctly firmer tone has developed in the waste paper market and some grades of this board and papermaking raw material have scored slight advancement. Strength is shown especially by the low-quality descriptions, such as old folded newspapers and mixed paper. Market prices of folded news have risen in the East to where sales at 35 cents per hundred pounds f.o.b. New York have been recorded, and higher than this price has been paid by mills in the Middle West. Similarly, No. 1 old mixed paper is up to 25 cents a hundred or higher f.o.b. eastern points, and some $2 to $3 per ton above this level in the West. White shavings are selling relatively freely at around 2 cents a pound at dealers' points for soft white shavings, and anywhere from 2.20 to 2.65 cents for No. 1 hard white shavings, acording to quality. Old kraft paper has brought to 1.30 cents and more per pound at shipping points, and new kraft cuttings 1.60 cents. Book stock exhibits a firming price trend and most dealers are now demanding at least 60 cents per hundred pounds for No. 1 heavy magazines.

The following quotations f.o.b. shipping points, some of which should be viewed as quotations only, are named by leading dealers:

	New York and Chicago
Hard white shavings, No. 1	2.20– 2.65
Hard white shavings, No. 2	2.00– 2.25
Soft white shavings	1.90– 2.25
Colored shavings	.50– .60
Heavy book, No. 1	.60– .70
Crumpled book, No. 1	.50– .60
Ledger stock	.60– 1.00
Kraft, No. 1	1.25– 1.35
New kraft cuttings	1.60– 1.75
White blank news	1.60– 1.75
Manilas, No. 1	.50– .60
Manilas, container	.35– .45
Folded news	.35– .45
Sulphite mill wrappings	.50– .60
Old corrugated boxes	.35– .45
New corrugated box cuttings	.40– .50
Mixed paper, No. 1	.25– .35
Common paper	(Nominal)

Pulpwood

The market for pulpwood is bare of feature other than that the movement toward consuming centers is keeping up in fair volume, everything considered, though with very little open-market demand of any consequence. Pulp manufacturers appear to be getting along with contract shipments without having to resort to transient purchases, and few current transactions are recorded. Ruling market prices are generally maintained.

Mechanical Pulp

Sellers of mechanical pulp are overshadowing buyers, and a quiet situation obviously ensues. There is a moderately good movement of supplies on contracts and back orders, but transient demand from practically all consuming quarters is at a very low ebb, and the market is developing almost no current activity of importance. Nevertheless, quoted prices adhere to about previous levels, and producers and importers seem indisposed to accept lower figures. Drastic curtailment

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Liquid Chlorine
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Chemipulp Process:

FOREMOST IN SERVING CHEMICAL PULP MILLS

TO—Improve efficiency.
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BY—Modern scientific methods.
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Hot SO_2 Liquor & Gas Recovery—eliminates expensive cooling equipment — recovers heat — saves steam — eliminates acid dilution from steam condensation — reduces boiler load peak — strengthens acid — accelerates penetration — cuts sulphur — increases yield and capacity — has been termed, "the all round fixer" for SULPHITE making.

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319 Castle Bldg., Montreal, Que.

100 Tons Kraft Per Day—
58% A.D.
With the Famous
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PRODUCTION . . . .

Kraft	up to	100 Tons
Sulphite	up to	80 Tons
Soda	up to	60 Tons
Groundwood	up to	50 Tons

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With 1 Press	42% A.D.
With 2 Presses	55% A.D.
With 2 Presses & Predryer	58% A.D.

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of production in Europe, and some reduction in output in the United States and Canada, is expected to lead to a firmer market condition in time, and, moreover, sellers have learned through experience it's no use trying to persuade consumers to buy under prevailing circumstances.

Canadian grinders are reported accepting down around $23 per ton f.o.b. pulp mills in the Dominion for groundwood for prompt shipment, while domestic groundwood is approximately $27 a ton at shipping points, depending on the air dry test and the freight to consuming centers.

Production of mechanical pulp in the United States in June reached 80,034 net tons, compared with 89,542 tons produced by identical mills in the preceding month, according to American Paper and Pulp Association's statistics. Mill stocks at the end of June amounted to 75,040 tons, against 72,561 tons a month before.

Chemical Pulp

Domestic pulp manufacturers are mostly busying themselves producing and delivering pulp to contract customers, or for their own purposes. Very little spot demand is developing. Occasional sales are being made to transient buyers, but they are occasional only, and generally involve small tonnage. Competition of imported pulps is exceedingly keen, and, moreover, many domestic producers are not willing to sell their product at the prices procurable in the current market. Efforts are being made to sustain quotations, and market prices, while to some degree nominal, are holding fairly steady. Bleached sulphite is reported available at varying prices, ranging from 2.50 cents per pound upwards ex the Atlantic seaboard for some West coast sulphites, to as high as 4.50 and 4.75 cents for some brands of bleached sulphite. Bleached soda pulp for book paper mills is quoted on a delivered basis at between 2.75 and 3 cents a pound, and domestic No. 1 kraft pulp at 1.80 to 2 cents for southern and up around 2.50 cents for eastern grades.

Pulp mills in the United States produced 98,629 net tons of chemical pulp during June, compared with 98,141 tons in identical mills in the preceding month, according to the monthly summary of the American Paper and Pulp Association. Stocks at producing plants at the end of June were 19,853 tons, contrasted with 19,494 tons at the end of May last.

Quotations f.o.b. pulp mills are as follows:

Bleached sulphite	2.50– 4.75
Easy bleaching sulphite	2.35– 2.60
Unbleached sulphite, No. 1 strong (news grade)	2.10– 2.30
Unbleached sulphite, No. 1 book	2.25– 2.50
Soda pulp bleached (delivered)	2.75– 3.00
Mitscherlich, unbleached	2.75– 3.00
Kraft	1.80– 2.75
Screenings, refined	(Nominal)

Chemicals

Other than shipments against contracts, the market for papermaking chemicals is showing limited activity. Paper manufacturers with few exceptions appear little desirous of additional supplies and are keeping out of evidence as purchasers. Quoted rates nevertheless are mostly maintained, though there are reports from time to time of producers or distributors shading prices to effect sales. Domestic casein is reported available at 6 cents a pound, and up to 7.50 cents, depending on the grind, while the imported product is quoted 8.50 to 9.50 cents. Bleaching powder quotations are between 2 and 2.35 cents a pound f.o.b. works.

Average quotations are as follows:

Alum, lump ammonia	3.50– 3.75
Alum, lump starch	3.75– 4.00
Blanc fixe, powdered	3.75– 4.00
Bleaching powder	2.00– 2.35
Brimstone (long ton, at mine)	18.00–20.00
Casein (duty paid)	6.00– 9.50
Caustic soda, solid, spot delivery	2.50– 2.55
China clay, domestic washed	7.00–11.00
China clay, foreign	13.00–21.00
Rosin	4.10– 4.25

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LAWRENCE "VORTEX" CENTRIFUGAL PUMPS

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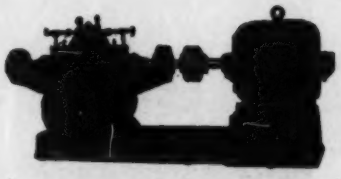

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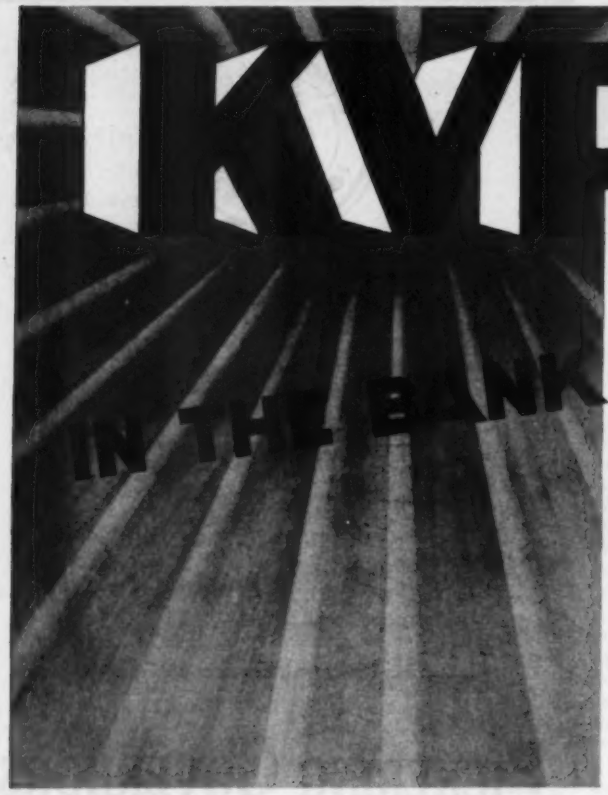

LETTERS
OF CREDIT"
OF GOODWILL

Uncle Jake says—

"If people would spend more time correcting what is wrong with themselves instead of spending so much time trying to find out what is wrong with the country, they would wake up some morning and find the millennium right at their front door."

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In the field of Protective Papers, these letters have won high place. They give each industry the right to protect its product and are an important factor in building good will which is the life of trade.

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of tissue, waxed & other paper, also for cutting strip as narrow as 1/8"
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New Papers

Writing—	
White rag	15– 40
White sulphite	7– 30
Colored rag	14– 40
Colored sulphite	7– 30
Ledger—	
White rag	15– 40
White sulphite	10– 30
Colored sulphite	10– 30
Colored rag	14– 40
Bond—	
White rag	15– 40
White sulphite	7– 30
Colored sulphite	7– 30
Colored rag	14– 40
Book—	
No. 1 S. & S. C.	5.25– 8.00
Machine finished	5.00– 8.00
English finish	5.00– 8.00
Coated and enameled	6.75–10.00
Lithograph, M. F.	7.00–11.50
Newsprint—	
Rolls, contract, per ton, delivered New York	57.00–
Rolls, transient, per ton, delivered New York	57.00–
Sheets, per ton, delivered New York	62.00–
Sideruns, per ton, delivered New York	42.00–46.00
Cover stock—	
Coated, both sides	–10.25
Coated, one side	–10.15
Tissue—	
No. 1 white, 20x30	.65– .70
No. 2 white, 40x36	.55– .65
No. 1 Manila, 24x36	.55– .65
Kraft	.70– .80
Wrapping—	
No. 1 kraft	4.25– 5.25
No. 2 kraft	3.50– 4.00
Southern kraft	3.50– 4.00
Boards—	**New York and Chicago**
News	26.00–30.00
Straw	40.00–45.00
Plain chip	26.00–30.00
White coated chip	42.50–45.00
Manila coated chip	35.00–40.00
Binders' board	65.00–70.00

Chemicals

(Continued from page 795)

Satin white	2.00– 2.25
Soda ash, 58 per cent light (bags)	1.15– 1.25
Starch, papermaker's, in bags	2.67–
Talc (ton)	16.00–18.00

The Norma-Hoffmann Bearings Corporation—manufacturer of "Precision" ball, roller and thrust bearings, with factory and main office at Stamford, Conn.—announces the opening of a sales office at 1014 American Bank Building, Parkway and Walnut street, Cincinnati, O. C. D. Kilham, for many years sales engineer at the home office and later at the Cleveland office, has been made manager in charge.

Annual Conference of Hammermill Agents

Hammermill's 20th annual conference with the agents who market the Hammermill lines was held in Erie, Pa., August 26, 27 and 28.

Preliminary to the general conference, a meeting was held with the agents' advisory committee at Weigelia Lodge, the summer home of Norman W. Wilson, vice-president and general manager of Hammermill, August 25. Present at this meeting were R. S. Bull, chairman, Bradner Smith & Co., Chicago; B. E. Reeves, The Alling & Cory Co., Rochester, N. Y.; A. D. Tayloe, Tayloe Paper Co., Memphis, Tenn.; G. W. Ward, D. L. Ward Co., Philadelphia; I. W. Carpenter, Jr., Carpenter Paper Co., Omaha, Nebraska; H. L. Carter, Carter Rice & Co., Boston; E. A. Petrequin, Petrequin Paper Co., Cleveland; Max Greenebaum, Beekman Paper & Card Co., New York City; C. E. Caskie, Caskie Dillard Co., Lynchburg, Va.; C. J. Babcock, Batten, Barton, Durstine and Osborn, Inc., New York City.

The three new members elected to the advisory committee to take the place of those whose terms expired this year are: Geo. W. Ward, D. L. Ward Company, Philadelphia; A. D. Cleveland, E. C. Palmer & Co., Ltd., New Orleans; Alan Chandler, The Alling & Cory Co., Pittsburgh; Richard S. Bull, Bradner Smith & Co., Chicago, was re-elected chairman of the advisory committee for another year. F. G. Low, Green, Low & Dolge, Inc., New York City and W. N. Gillett, Chicago Paper Co., Chicago, were the two new members elected to the agents advertising committee.

Ernest R. Behrend, president of the company, received a hearty greeting from the visiting paper merchants when he opened the first general business session August 26, after being absent from the last two annual conferences.

Norman W. Wilson, vice-president and general manager of Hammermill and C. W. Chabot, director of distribution, spoke on business conditions in general and their effect on the paper industry. The merchandising problems that faced the conference were outlined by Harrison R. Baldwin, manager of sales and A. Ellis Frampton, advertising manager.

The mornings of the last two days of the conference were devoted to an exchange of ideas between the visiting agents and the members of the Hammermill organization in an attempt to work out their mutual problems to best advantage.

The afternoons of these days were given over to golf on the links of the Kahkwa club where all the sessions of the conference were held, and other forms of outdoor recreation. Prizes were awarded the winners.

Five golf prizes were also provided by the agents to be contested for by the Hamermill men.

Mayo Resigns as I. P. Co. Manager

E. H. Mayo, production manager of the International Paper Company, having charge of the production of the six southern mills of the company has resigned his position and retired permanently from active business. Mr. Mayo went to Orange, Texas, in 1911, where he was connected with the Yellow Pine Paper Company, which was then making water finish wrapper from soda pulp. He changed the mill from soda to the kraft pulp system for the production of kraft wrapping paper. When the mill of the Southern Paper Company at Moss Point, Miss., was put in operation in 1913, Mr. Mayo was appointed general superintendent and later became manager. Then the Southern Paper Company was absorbed by the International Paper Company and Mr. Mayo was made production manager of it and the other five mills of the company at Moss Point, Miss., was put in operation in 1913, Mr. Mayo had rounded out 40 years of service in paper manufacturing.

CHEMICAL AND MECHANICAL PULP

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Cellulosefabriks A.—G., Bratislava, Cecho-Slovakei
Bergvik och Ala Nya Aktiebolag, Söderhamm, Sweden
Svanö Aktiebolag, Svanö, Sweden
Aktieselskabet Greaker Cellulosefabrik, Greaker Norway

KRAFT PULP

Nensjö Cellulosa A.—B., Sprängsviken, Sweden
Bergvik och Ala Nya Aktiebolag, Söderhamm, Sweden
Munksunds Aktiebolag, Munksund, Sweden
Kalix Träindustri Aktiebolag, Vanafjärden, Sweden

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EXPORTS

Exportations of paper and paper products from the United States are running substantially behind, in point of aggregate value, the exports of last year, judging from figures covering the first half of the current year. Exports during the first six months of 1931 reached a total value of $12,125,865, according to official statistics compiled by the U. S. Department of Commerce in Washington, compared with shipments of a declared value of $16,722,089 in the corresponding period a year ago. June exports amounted in value to $1,935,747, registering a slight decrease as contrasted with exports of a value of $2,194,329 in the preceding month, and a larger decline compared with shipments of a value of $2,482,864 in the similar month of 1930.

Newsprint exports during June totaled 1,312,561 pounds, valued at $44,360, against 1,915,963 pounds of a value of $79,160 in the same month a year ago, with principal exports in June last to Cuba, the Philippine Islands and South America. Exports of uncoated book paper in the month of June amounted to 2,058,641 pounds of a value of $127,554, compared with 2,554,667 pounds of a value of $199,497 in the same month in 1930. Wrapping paper exports in June were valued at $132,863, showing a considerable decrease compared with $214,922 in June last year, while writing paper shipments reached a value of $101,816 in June, contrasted with $181,799 a year ago. Sheathing and building paper exports last June were valued at $50,311, against $57,590 in June last year; tissue and crepe paper shipments at $44,305, against $52,634; paper bags at $65,585, against $66,350, and paper boxes at $91,124, against $112,363.

Exports of boxboard reached a value of $100,541 in June, 1931, compared with $159,634 in the similar month last year, while exports of other paperboard were valued at $130,167, against $117,848.

IMPORTS

Wood Pulp

A distinctly quiet market prevails for imported wood pulp. Reports have divulged little buying of any consequence in recent weeks, paper and board manufacturers with few exceptions keeping a close eye on the market and its developments and potentialities but engaging in very limited purchases either of pulp on the spot in the United States or for forward shipment from primary sources abroad. Signs are that the average consumer of pulp has been fully able to get along with stocks on hand and incoming supplies against contracts without having to resort to additional buying for the time being.

Nevertheless, prices of foreign pulps have held remarkably steady, and are now characterized by a moderately firm undertone. It would appear as if market values have hit levels which buyers are having difficulty breaking through, and nearly everybody on the selling side of the trade expresses the belief that prices are resting on the bottom and that in all probability the next move in the market will be in an upward direction. No one seems to expect any material rise in pulp values, but it is felt that if demand increases this fall and winter as it is anticipated it will, the market will register at least some slight price improvement, if for no other reason than that the rather drastic curtailment of production in Europe, in Canada and by domestic pulp manufacturers is steadily creating a stronger technical position which may wage influence on values once demand expands.

European producers of sulphite, including those in practically every important pulp-manufacturing country on the other side of the Atlantic, have agreed on a further cut of 15 per cent in their output for the balance of this and until June 30, 1932, thereby reducing their production to 70 per cent of normal. Moreover, the agreement provides for a continuance of the original 15 per cent curtailment all through the year 1932. This action on the part of the Europeans is expected to gradually lead to a firmer statistical condition in pulp, particularly as the lockout in the Norwegian pulp mills continues and pulp production in Norway is practically nil and has been for four or five months.

Imports of chemical pulp into the United States in June showed a rise over the May receipts, reaching a total of 100,743 long tons of all grades of chemical, valued at $4,643,281, against 70,328 tons of a declared value of $3,393,152 in the preceding month. Total importations of chemical pulp during the first half of this year were 563,960 tons, compared with 691,131 tons imported in the corresponding period of 1930, a decrease of approximately 18 per cent. Groundwood imports in June were 12,064 long tons, valued at $312,042, against 11,474 tons of a value of $303,770 in May, and making a total for the first six months of 1931 of 84,108 tons, compared with 134,951 tons in the same time a year ago.

Importers in general are asking 2 cents to slightly higher per pound ex dock American Atlantic seaboard for prime unbleached sulphite, and around 2.20 cents a pound for prime easy bleaching sulphite. Bleached sulphite is quoted on a wide range of from about a low of 2.60 cents up to 4 cents and more for prime grades. Prices of standard Swedish prime kraft pulp are well stabilized at 1.50 to 1.60 cents a pound ex dock. Imported groundwood is reported available at $26 to $27 per short ton at American Atlantic ports for either dry or moist pulp.

Current market quotations ex dock New York, and receipts at the port of New York during August, 1931, these data being taken from manifests of vessels reaching that port last month, follow:

Bleached sulphite, No. 1	2.60– 4.25
Unbleached sulphite, strong No. 1	2.00– 2.25
Unbleached sulphite, No. 2	1.90– 2.10
Easy bleaching sulphite	2.15– 2.30
Mitscherlich, unbleached, genuine	2.50– 2.75
Mitscherlich, unbleached, ordinary	2.10– 2.25
Kraft, standard Swedish	1.50– 1.65
Groundwood, per ton (dry)	26.00–27.00

Castle & Overton, Inc., 1,460 bls. from Rotterdam and 6,433 Hamburg; Bulkley, Dunton & Co., 108 bls. from Stugsund, 875 Sundsvall and 1,980 Gothenburg; Johaneson, Wales & Sparre, Inc., 3,325 bls. from Sundsvall; Irving Trust Co., 750 bls. from Bremen; J. Andersen & Co., 127 bls. from Bremen, 750 Gothenburg and 3,900 Hernosand; Lagerloef Trading Co., 2,150 bls. from Kemi, 1,398 Rauma, 885 Wiborg, 405 Tolkis and 120 Helsingfors; M. Gottesman & Co., 550 bls. from Rotterdam and 3,200 Sibenik; E. M. Sergeant Co., 150 bls. from Oslo and 175 Gothenburg; Guaranty Trust Co., 230 bls. from Gothenburg; Price & Pierce, Ltd., 725 bls. from Gothenburg, 321 Stockholm and 900 Hernosand; Pagel, Horton & Co., Inc., 4,375 bls. from Karskar and 500 Fredriksakans; Russell McCandless, 600 bls. from Gothenburg; Parsons & Whittemore, 360 bls. from Gothenburg and 300 Helsingfors; Brown Bros. & Co., 3,900 bls. from Sundsvall and 176 Hamburg; Stora Kopparberg Corp., 1,150 bls. from Skutskar; E. J. Keller Co., Inc., 707 bls. from Hamburg; Kidder Peabody Acceptance Corp., 340 bls. from Hamburg; Order, 1,367 bls. from Hamburg, 300 Gothenburg and 1,200 Hernosand. Pulpwood—Polarus Shipping Co., 1,224 cords from Mulgrave, N. S.; Amtorg Trading Corp., 6,079 cords from Leningrad.

Paper Stock

Importations of papermaking rags into the United States dropped to a new low of 9,123,880 pounds of a declared value of $134,767 during June, 1931, according to official statistics

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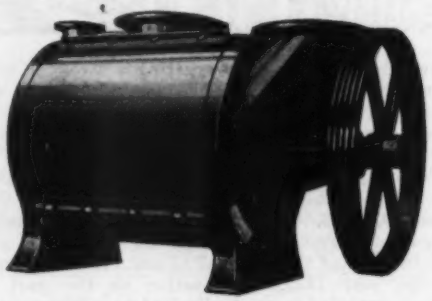

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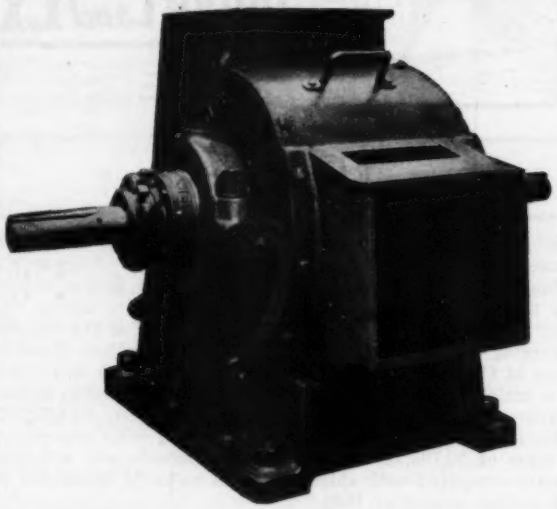

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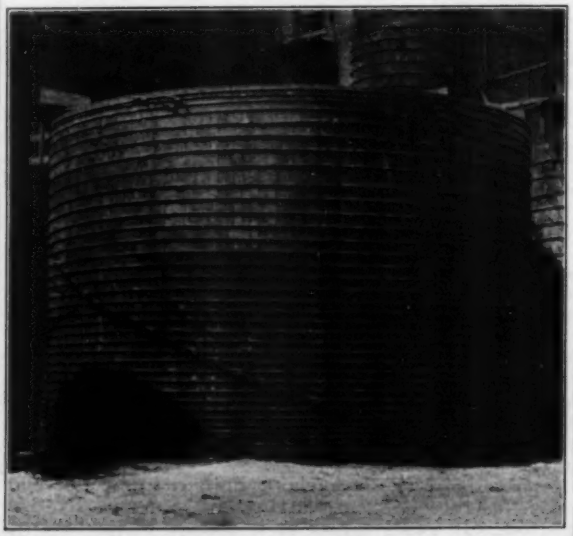

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compiled by the U. S. Department of Commerce, comparing with 24,015,864 pounds of a value of $462,383 imported in the same month last year, and bringing the total for the first half of the current year up to 62,342,206 pounds of a value of $849,773, against 189,803,954 pounds of a value of $3,941,897 in the similar period of 1930. Imports of all other paper stock excepting wood pulp in June amounted to 9,142,543 pounds, valued at $143,031, against 25,208,038 pounds of a value of $254,859 in June last year, making a total of 57,691,829 pounds for the first six months of this year, valued at $897,658, contrasted with 134,355,188 pounds of a value of $1,950,264 in the corresponding time a year ago.

Imports during the month of August continued small, judging from receipts through the port of New York. Arrivals of papermaking materials at that port last month, these data being taken from the manifests of steamers reaching New York during the month and therefore unofficial, were as follows:

Old Rope—Brown Bros. & Co., 192 coils and 77 bls.; International Purchasing Co., 163 coils; International Trust Co., 203 bls.; Banca Commerciale Italiana Trust Co., 94 coils; Amtorg Trading Corp., 183 bls.; Order, 64 bls.

Old Bagging—Darmstadt, Scott & Courtney, 355 bls.; E. Butterworth & Co., 40 bls.; R. F. Downing & Co., 81 bls.; Castle & Overton, 50 bls.; Bank of New York & Trust Co., 143 bls.; Bush Service Corp., 115 bls.; Banca Commerciale Italiana Trust Co., 324 bls.; Irving Trust Co., 140 bls.

Rags—Katzenstein & Keene, 148 bls.; Castle & Overton, 54 bls.; E. J. Keller Co., 326 bls.; J. Reiss & Co., 2 bls.; J. Cohen & Sons, 19 bls.; Victor Galaup, Inc., 65 bls.; C. Nelson, 31 bls.; R. Canovai & Sons, 55 bls.; Amtorg Trading Corp., 1,677 bls.; R. F. Downing & Co., 489 bls.

Miscellaneous Paper Stock—S. Birkenstein & Sons, 135 bls.; H. W. T. Mall, 117 bls.; American Merchant Lines, 20 bls.; Milton Snedeker Corp., 87 bls.; J. Cohen & Sons, 20 bls.; Brown Bros. & Co., 225 bls.; C. Nelson, 11 bls.; Order, 219 bls.

Paper

Imports of paper into the United States in June, 1931, reached a total value of $11,364,917, compared with imports of a value of $12,195,662 in the preceding month, and $13,283,479 in the same month of 1930, according to official statistics issued by the U. S. Department of Commerce. Imports in the first half of this year aggregated in value $66,095,703, showing a considerable decrease contrasted with 75,342,910 in the corresponding period of last year. The great bulk of these imports, amounting to $58,336,155 worth in the first six months of the current year, was standard newsprint, compared with $66,431,539 in the first half of 1930.

Paper imports last month continued on the low side, taking the receipts at the port of New York as a criterion. Arrivals of all kinds of paper through that port during August, these data being taken from manifests of arriving vessels and therefore unofficial, were as follows:

Printing—Internatitonal Paper Co., 2,792 rolls from Dalhousie, N. B.; Perkins-Goodwin Co., 1,093 reels from Hamburg and 376 reels Bremen; Jay Madden Corp., 179 reels from Hamburg; W. H. Bell, 7,098 rolls from Liverpool, N. S.; Keuffel & Esser Co., 188 rolls and 15 cs. from Hamburg; S. S. Zabriskie, Inc., 44 reels from Hamburg; E. Dietzgen & Co., 66 cs. from Rotterdam; F. C. Strype, 5 cs. from Rotterdam; National City Bank, 15 cs. from Rotterdam; T. N. Fairbanks, 61 cs. from Genoa, 5 cs. Kobe and 6 cs. Yokohama; J. Henschel & Co., 12 cs. from Hamburg; Stora Kopparberg Corp., 51 reels from Gothenburg; P. C. Kuhlke, 5 cs. from Antwerp; P. Puttmann, 17 cs. from Antwerp; Vernon Bros., 70 cs. from Glasgow; Order, 1,350 reels and 16 cs. from Bremen, 1,971 reels and 97 bls. from Hamburg, and 289 reels Kotka.

Wrapping—Karl Pauli Corp., 2 cs. from Rotterdam; Borden & Riley Paper Co., 13 cs. from Bremen; Standard Products Corp., 36 rolls and 16 cs. from Antwerp; Walker Goulard Plehn Co., 24 bls. from Rotterdam and 47 bls. Gothenburg; Summitt Paper Co., 16 rolls and 3 cs. Rotterdam; E. Dietzgen & Co., 2 cs. from Antwerp; Borregaard Co., 331 reels and 47 bls. from Gothenburg; F. L. Kreamer & Co., 145 bls. from Gothenburg; Lunham & Reeves, 113 rolls and 33 bls. from Gothenburg; J. P. Heffernan Paper Co., 50 bls. from Bilbao; Chase National Bank, 8 cs. from Hamburg; C. Steiner, 73 bls. from Rotterdam; Blauvelt Wiley Paper Co., 12 bls. from Glasgow; Order, 2 cs. from Antwerp.

Cigarette—G. A. Henshaw & Sons, 43 cs. from Southampton and 34 cs. Havre; Chase National Bank, 6 cs. from Trieste; Standard Products Corp., 252 cs. from Havre; Southern Pacific Co., 3 cs. from Southampton; Champagne Paper Corp., 679 cs. from Havre; American Tobacco Co., 822 cs. from Bordeaux; P. J. Schweitzer, Inc., 2 cs. from Southampton.

Writing—Globe Shipping Co., 8 cs. from Southampton; Guibont Freres & Co., 11 cs. from Southampton; Order, 12 cs. from Southampton.

Filter—H. Reeve Angel & Co., 139 cs. from Southampton and 23 cs. London; Gerhard & Hey, 33 bls. from Southampton; J. Manheimer, 232 bls. from Southampton; A. Giese & Son, 42 bls. from Southampton and 10 bls. Hamburg; E. Fougera & Co., 69 cs. from Southampton; C. Sleicher & Scholl Co., 17 cs. from Hamburg.

Tissue—W. J. Byrnes & Co., 2 cs. from Hamburg and 7 cs. Southampton; Atlantic Forwarding Co., 9 cs. from Hamburg; B. F.

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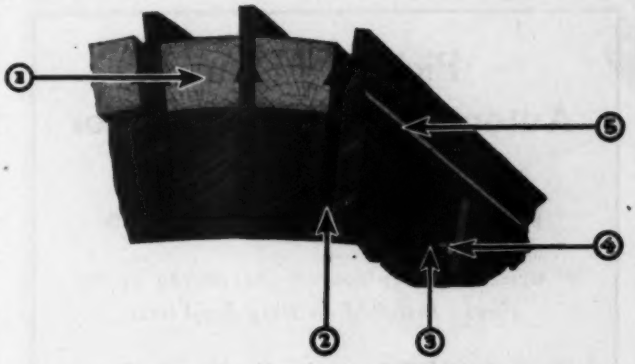

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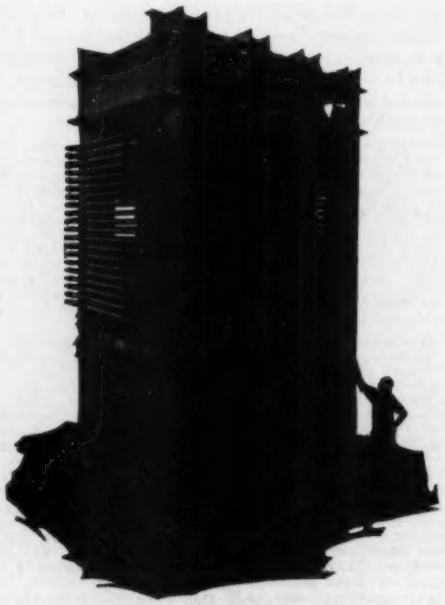


2000-ton 12'-6"x4'-6"
20 Opening Wall Board Press

Drakenfeld & Co., 4 cs. from Liverpool; Order, 4 cs. from Hamburg and 31 cs. Marseilles.

Drawing—Keuffel & Esser Co., 73 cs. from Hamburg; H. Reeve Angel & Co., 16 cs. from London; Atlantic Transport Co., 2 cs. from London; G. Haas, 2 cs. from London.

Photo—Gevaert Co. of America, 318 cs. from Antwerp; J. J. Gavin & Co., 8 cs. from Southampton; Globe Shipping Co., 251 cs. from Bremen.

Hanging—C. A. Haynes & Co., 5 cs. from London; F. J. Emmerich & Co., 5 cs. from Hamburg and 9 bls. Liverpool; G. J. Hunken & Co., 4 cs. from Bremen; J. E. Bernard & Co., 10 cs. from Southampton; R. F. Downing & Co., 4 cs. from Yokohama and 4 cs. Southampton; Guaranty Trust Co., 30 cs. from Hamburg; Bush Service Corp. 2 cs. from Rotterdam and 4 cs. London.

Board—Colmar Paper Corp., 19 cs. from Antwerp; H. Fuchs & Son, 23 bls. from Gothenburg; Lagerloef Trading Co., 84 bls. from Kotka; Order, 75 bls. from Hamburg.

Miscellaneous—C. Bruening, 180 reels from Rotterdam; Japan Paper Co., 52 cs. from Kobe, 8 cs. Southampton, 10 cs. Havre and 2 bls. Gothenburg; Japan Import & Export Co., 5 cs. from Kobe; Whiting-Patterson Co., 4 cs. from Southampton and 22 cs. London; W. A. Foster, 5 cs. from Southampton and 4 cs. London; Hensel, Bruckman & Lorbacher, 65 cs. from Hamburg and 7 cs. Bremen; Dingelstedt & Co., 5 cs. from Bremen; Henschel, Naeve & Co., 2 cs. from Bremen; Corn Exchange Bank, 55 cs. from Kobe; Happel & McAvoy, 14 cs. from Hamburg; Gimbel Bros., 10 cs. from Hamburg; Heemsoth & Basse, 78 bls. from Rotterdam and 3 bls. Hamburg; Winter Wolff & Co., 214 cs. from Rotterdam; S. Gilbert, 5 cs. from Bremen; Keller-Dorian Paper Co., 20 cs. from Havre and 24 cs. Southampton; Guaranty Trust Co., 12 cs. from Havre; B. F. Drakenfeld & Co., 36 cs. from Liverpool; P. H. Petry & Co., 2 bls. from Havre; Philadelphia Bag Co., 2 bls. from Hamburg; Borden & Riley Paper Co., 8 cs. from Bremen; H. Reeve Angel & Co., 13 cs. from Yokohama; H. P. Elliott, 17 cs. from Yokohama; J. E. Bernard & Co., 9 cs. from Gothenburg; Iwai & Co., 4 cs. from Kobe; E. Dietzgen & Co., 82 cs. from Hamburg; C. L. Voorhees, 7 cs. from Yokohama; J. Beckhardt & Co., 2 cs. from Rotterdam; S. H. Pomerance, 2 cs. from Havre; Gerhard & Hey, 14 pkgs. from Rotterdam; A. C. Rempert, 12 cs. and 8 rolls from Glasgow; F. Murray Hill, Inc., 7 cs. from Hamburg; Hudson Forwarding Co., 19 cs. from Havre; Phoenix Shipping Co., 2 cs. from Bremen; American Express Co., 9 reels from Glasgow and 50 cs. Havre; Globe Shipping Co., 7 cs. from Bremen, 11 bls. Hamburg, 5 cs. Rotterdam and 5 cs. Antwerp; International Forwarding Co., 5 cs. from Rotterdam and 16 cs. Hamburg.

Hercules Chemists End Research in Germany

Three Hercules Powder Company research chemists have returned from Germany to the company's headquarters at Wilmington within the past few weeks. They are Dr. E. J. Lorand, Dr. H. M. Spurlin and Dr. Kyle Ward, Jr.

For the past two years, the Hercules men have been studying cellulose problems in Berlin. Dr. Lorand and Dr. Ward have been at the University of Berlin working with Prof. Hans Pringsheim, and Dr. Spurlin has been at Kaiser Wilhelm Institute studying with Prof. Herzog, both professors being well-known cellulose authorities.

The higher fatty acid esters of starch and cellulose, osmotic pressure measurements of cellulose solutions, and new methods of degradation of cellulose have been the main research problems undertaken by the Hercules representatives.

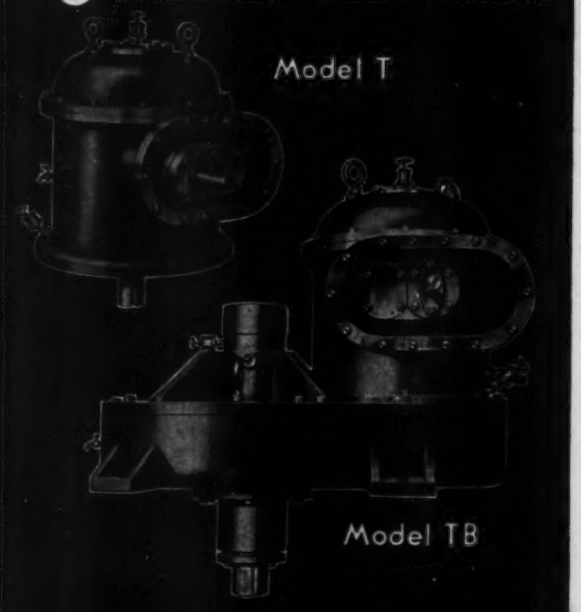
International-Stacey Opens St. Louis Office

Announcement has come from the general offices of the International-Stacey Corp., Columbus, Ohio, that B. T. Ehrnman who was formerly located in the Chicago office of the International-Stacey Corporation has been transferred to St. Louis as Division Manager with offices at Room 2192 Railway Exchange Building.

Mr. Ehrnman has been associated for a number of years with the Roots-Connersville-Wilbraham Division of this company in the sale of gas pumps, meters, blowers and other equipment. With the opening of the St. Louis office he will also have charge of the sale of Ideco Oil and Gas Drilling and Pumping equipment, Stacey Brothers Telescopic, "Bullett" Pressure and Stacey-Klonne Dry Seal Gas Holders, Ideco Standard Steel Buildings, Ideco Airport and Airway Equipment and Ideco Electrical equipment, in addition to the Roots-Connersville-Wilbraham line of products.

The program of the Direct Mail Advertising Association's annual conference, to be held October 7, 8 and 9 in Buffalo, N. Y., is built around the theme how to utilize advertising to produce profitable returns in the face of generally adverse conditions. The executives of the association announce that the speakers chosen are men who have demonstrated how this can be done, and it is predicted that the 1931 conference will be perhaps the most helpful in the history of the organization.

NEW ENGLAND Agitator Drives



- in standardized models for the most efficient application to stirrers for stock chests-clay and size mixers - color and coating mixers - dissolving alum - deinking and defibering news stock.

¼ to 50 H. P. and speed ratios up to 2,000 to 1.

Fully enclosed - continuous self lubrication - quiet running - anti-friction bearings throughout - oil trapped against leakage - high efficiency - utmost economy of operation.

Send for complete information

NEW ENGLAND TANK & TOWER CO.

WORKS: EVERETT, MASS. - - 50 CHURCH STREET, N. Y.

Prolongs felt life

IF you want to lengthen the life of your felts, make sure that each washing removes every particle of dirt, sizing and other foreign matter.

Felts washed the Oakite way are left thoroughly clean. That is why re-washings are so infrequent; why wear and tear are reduced.

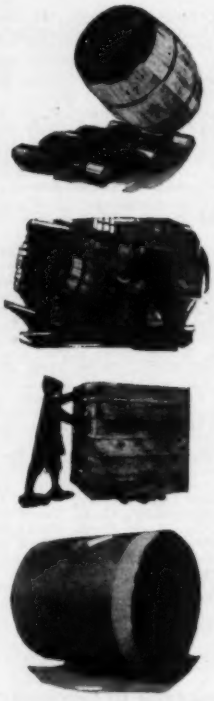
Let our Service Man in your vicinity give you complete information on the way other mills are reducing felt washing and replacement costs with Oakite. No obligation.

Manufactured only by
OAKITE PRODUCTS, INC., 16A Thames St., NEW YORK, N. Y.

OAKITE

TRADE MARK REG. U.S. PAT. OFF.

Industrial Cleaning Materials and Methods



MARION Dolly Trucks

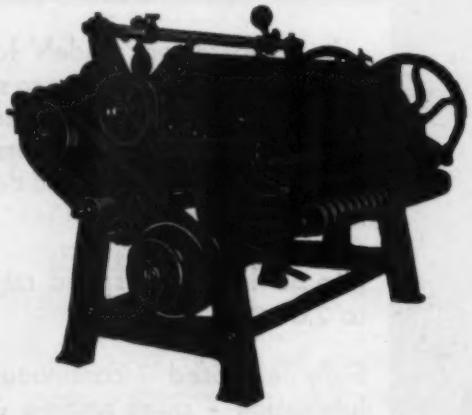
For ugly loads

The MARION DOLLY TRUCK handles the awkward, bulky, heavy, hard-to-get-hold-of loads—cases, barrels, rolls, bundles, drums, carboys. It cradles the load, carries it swiftly, in perfect balance. Low skids permit loading from either side or either end. Built in seven sizes—high wheel and low wheel types—flat top and cradle top styles.

Cut your handling costs—utilize out of the way storage space—by using the strong, agile, smooth-running Marion Dolly. Write for circular.

MARION MALLEABLE IRON WORKS
924 Miller Ave. Marion, Indiana

807



PAPER CUTTERS

Single—Duplex—Diagonal

CUTTER KNIVES
PATENT TOP SLITTERS

HAMBLET MACHINE CO.
LAWRENCE, MASS.

Pneumatic Package Press

Triple Shaft Toilet Winder

Creping Machine

Napkin Embosser and Printer

Automatic Core Cutter

Paper Converting Equipment

Machinery from Hudson-Sharp is in use in converting mills throughout the United States with installations in many foreign mills.

Standard designs are obtainable for general purposes but special purpose machines will be designed by our engineers to efficiently meet any special mechanical problem at hand.

Circulars and catalogue of our line are obtainable upon application.

HS MACHINE CO.

Hudson-Sharp Machine Co.
GREEN BAY, WISCONSIN
Chicago Office: 574 Wrigley Bldg.
Manufacturers and Designers of Special Machinery

Foreign Trade Opportunities

The following foreign trade opportunities are issued by the Bureau of Foreign and Domestic Commerce of the United States Department of Commerce. Those interested are requested to communicate with the Bureau at its offices in Washington or New York or its branch offices in other cities, in every case mentioning the number of the inquiries referred to.

No. 52908—Cellulose sheeting, transparent. Zurich, Switzerland. Purchase desired.

No. 52896—Insulating board. Winnipeg, Canada. Purchase and agency desired.

No. 52912—Presses and pressing machinery for the manufacture of wall and insulating board. Hernosand, Sweden. Agency desired.

No. 52926—Writing, book, bond and other papers. Bombay, India. Agency desired.

No. 52865—Rosin, caustic soda and soda ash. Medan, Sumatra. Purchase desired.

No. 53108—Bags, envelopes, and other paper. San Jose, Costa Rica. Agency desired.

No. 53020—Paper bottles, for milk and vinegar. Bucharest, Rumania. Purchase and agency desired.

No. 53020—Cellulose sheeting, transparent. Bucharest, Rumania. Purchase or agency desired.

No. 53018—Crepe and waterproof papers for wrapping purposes. Hamburg, Germany. Purchase desired.

No. 53019—Lace paper for fancy cakes, and paper drinking cups. Berlin, Germany. Agency and purchase desired.

No. 53020—Photostat and blueprint paper. Bucharest, Rumania. Purchase and agency desired.

No. 53101—Wallboard, wood fiber, for paneling doors and ceilings. Rotterdam, Netherlands. Agency desired.

No. 52992—Wrapping paper for bread. San Juan, Porto Rico. Agency desired.

No. 53244—Book and cover paper. Toronto, Canada. Purchase desired.

No. 53243—Paper drinking straws. Bombay, India. Agency and purchase desired.

No. 53277—Lace papers to line candy boxes, and paper doilies. Toronto, Canada. Agency desired.

No. 53279—Machinery for making cardboard paper boxes and fiber shipping cases. Bogota, Colombia. Agency desired.

No. 53278—Strawboard, double-faced, corrugated, very light. Ottawa, Canada. Purchase desired.

No. 53299—Wallpaper. Vicenza, Italy. Sole agency desired.

No. 53390—Asphalt and roofing papers. Hoogkerk, Netherlands. Purchase desired.

No. 53496—Bags, transparent cellulose sheeting, for coffee, tea and peanuts. Edmonton, Canada. Purchase desired.

No. 53434—Paper boxes for confectionery, and novelty papers. Madrid, Spain. Agency desired.

No. 53364—Overissued newspapers. Bombay, India. Purchase desired.

No. 53472—Paper cord making machinery. Havana, Cuba. Purchase desired.

No. 53510—Rubberized paper. The Hague, Netherlands. Purchase desired.

No. 53415—Type papers, tinted papers, extra strong; and blotting paper. Wellington, New Zealand. Agency desired.

No. 53418—Paper towels, tablecloths and napkins. Stockholm, Sweden. Agency desired.

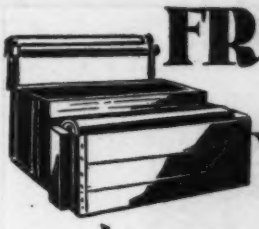
No. 43416—Wall and insulating board. Reykjavik, Iceland. Purchase desired.

No. 53423—Wrapping paper in rolls and sheets. San Juan, Porto Rico. Agency desired.

Kalbfleisch Announces Dry Gum Rosin Size

Gum rosin size in dry form is now available according to word received from The Kalbfleisch Corporation. This is a decided step forward, doing away with the inconveniences of liquid and mill-made gum rosin sizes.

Much research, experimentation and checking were necessary to develop this product for the paper mill in this form, and Kalbfleisch has spent considerable time and money at it. But now it is ready for the market, and bids fair to be an interesting and successful newcomer among rosin sizes.

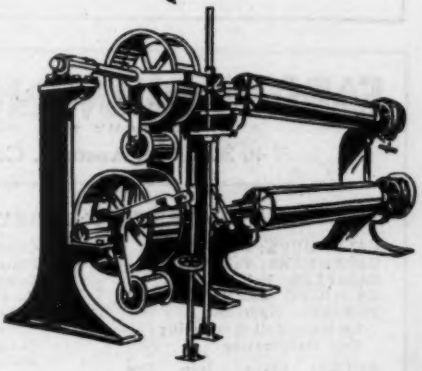


FROM VATS TO WINDERS

Nothing else on a paper machine is subjected to the punishment the felts are called upon to withstand.

No felt, however good, ever serves for any great stretch of time, altho Orr Felts have demonstrated their ability to wear appreciably longer than felts they have supplanted.

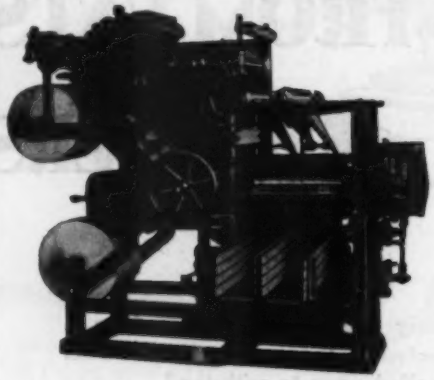
Try Orrs. With them you will obtain maximum water removing service and an extra measure of endurance that will surprise you.



The Orr Felt & Blanket Co.

Piqua, Ohio

ORR FELTS

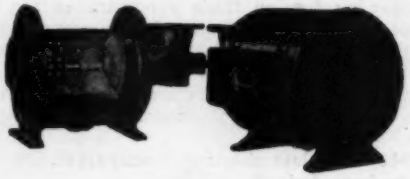


for PAPER NAPKINS

400 to 500 a minute folded, embossed and printed in one to four colors.

For full details of this most efficient machine—write to

PAPER CONVERTING MACHINE CO.
GREEN BAY, WISCONSIN



In Sweden:—

"REPEATS" Prove RESULTS
8 Repeats for 22 "Trimbeys" in 11 Months

AGAIN WE OFFER:—

We Will—
Install on Trial, in ANY Mill, on ANY Kind of Pulp, for Comparative Tests Against ANY Centrifugal Screen.

And—Cheerfully Abide by the Results.

TRIMBEY MACHINE WORKS
GLENS FALLS, N. Y.
Also "Made in Canada"

WEIGHT REGULATORS CONSISTENCY REGULATORS
METERING SYSTEMS

FARREL-BIRMINGHAM
COMPANY INC.
40 State St., Ansonia, Conn.

PAPER MACHINERY

CALENDERS: Board
CALENDERS: Paper
CALIPERS: Roll
GRINDING MACHINES: Roll
PRESSES: Hydraulic
Calender Roll Recovering
Pulp Dehydrating
ROLLS: Chilled Iron, Dry Sand, Gray Iron, Alloy Iron, Steel
For: Calender Stacks
Board Calenders
Super-Calenders
Glassine Calenders
Friction Rolls
Breaker Rolls
Smoothing Rolls
Creping Rolls
Plater Rolls
Cutting Machines
Paraffining and Waxing Machines
Saturating Machines
Silicating Machines
Miscellaneous Special Purposes
TRANSMISSION MACHINERY
Gears, Cut: Spur, Single and Double Helical (Farrel-Sykes Continuous Tooth Type)
Speed Reduction Units (Farrel-Sykes)

See PAPER AND PULP MILL CATALOG or LOCKWOOD'S DIRECTORY — 1931

Farrel Indicating Calipers show slightest variation in diameter of roll at any point in its length and measure exact amount of crown. Saves many times its cost in preventing lost production time, improving accuracy and reducing time required for checking and measuring rolls.

NEW RECORDS FOR PRODUCTION AND PRECISION ARE MADE ON FARREL-BIRMINGHAM MACHINES

"READY DRESSED" MILL COGS
LABOR SAVING—TIME SAVING

THE MOST ECONOMICAL FILLING THAT CAN BE PUT IN A MORTISE WHEEL

Ready Dressed
Blank Head

WE MAKE ANY STYLE OR SIZE WANTED
WRITE FOR INSTRUCTION SHEET "O" WHICH IS FREE

QUICK SERVICE ON ALL SIZES
THE N. P. BOWSHER CO., So. Bend, Ind.

Know the merits of the Dart Bronze to Bronze ground seat Unions

Try a free sample

Strength of Malleable Iron in combination with
2 Two Non corrosive seats of bronze

E. M. DART MFG. CO.
Providence, R. I.

Distributors
The Fairbanks Company
New York and Branches

Canadian Factory
Dart Union Co., Ltd.
Toronto, Canada

Sales Distribution in Paper and Paperboard Industry

The Census Bureau has just released its distribution of sales census (1929) in the manufacturing plants in the paper and paperboard industry, showing sales to industrial user make up 48.3 per cent of the total, and wholesalers 45.9 per cent. Total sales amounted to $862,581,000. Industrial users are such as converters, lumber yards, newspapers, etc. Only 3.7 per cent of the total was sold by manufacturers to their own wholesale branches for resale and the remaining 2.1 per cent was sold direct to retailers.

Extensive charts accompany the report, showing total value of newsprint and similar papers made in the paper and paperboard industry, total value of wrapping paper, paperboards, tissue paper, building paper, etc.

Solvay—Fiftieth Anniversary

September marks the Fiftieth Anniversary of the incorporation of the Solvay Process Company.

The original 30-ton per day soda ash plant at Syracuse, New York, was the beginning of the tremendous industry which now supplies the world-wide market with alkalies in varied forms.

Rowland Hazard was the founder and first president of the Solvaly Process Company. It was he who guided it to the acquisition of the American patent rights of Ernest and Alfred Solvay, perfectors of the method of manufacturing soda ash, now known the world over as the Solvay Process.

A pioneer in the American field, the company has been in continuous operation and is one of the largest manufacturers of commercial alkali in this country, with plants located at Syracuse, New York, Detroit, Michigan and Hutchinson, Kansas.

In addition to commercial alkalies the company now manufactures an extensive line of related products, including Cleansing Sodas, Calcium Chloride and Liquid Chlorine.

The Solvay Process Company completed the form of organization under which it operates to-day with the formation, in 1927, of the Solvay Sales Corporation, which has entire control of the sale of Solvay products.

Penna.-New Jersey Supers Will Hold Meeting

A meeting of the Pennsylvania-New Jersey Division of The American Pulp and Paper Mill Superintendents' Association will be held at the Benjamin Franklin Hotel, Philadelphia, Saturday evening, September 12, 1931. Dinner will be served in the El Patio room at 6:30 p. m. Members who cannot arrange to be there in time for dinner can come later. The business meeting will start at 8:00 p. m. in the Betsy Ross room.

The officers of this association are very desirous of having as many members present at this meeting as possible, as it is planned to get a semi-annual divisional meeting lined up at this time.

Members are asked to notify Secretary J. Linville Mullin, Jessup and Moore Paper Company, Wilmington, Del., as promptly as possible of their intention to attend.

Revival of "The Houghton Line"

A cheerful sign of the times is the announcement from E. F. Houghton and Company, Philadelphia, of the revival of the Houghton Line, the vivid and aggressive little monthly that was for almost 20 years one of the most widely read of the one-man magazines.

The first issue of the new Line was issued September 1. Its publication was discontinued in 1929 after the death of Charles E. Carpenter, president of E. F. Houghton and Company, who edited it, made it famous, and gave it a circulation of more than a quarter of a million.

The old Line had a vast following among industrial executives of this and foreign countries. The directing editor of the new publication is Louis E. Murphy, now president of E. F. Houghton and Company, who had a lifelong association with the founder of the magazine.

TEXROPE DRIVES

ACCLAIMED BY EVERY INDUSTRY

"The Ultimate in Efficient Transmission"!

In the short space of six years, the *Texrope Drive* has been accorded extraordinary acceptance in every branch of industry. So outstanding is its efficiency in every extreme of service—so marked its dependability and economy—that the number of *Texrope* installations are already well past the 90,000 mark, and increasing fast.

Genuine Texrope Drives are positive, silent and slipless. Short centers, besides requiring a minimum of space, result in a maximum utilization of power. Being flexible, they do not transmit vibration but are shock-absorbing and a protection for the motor. But most important of all, it is practically impossible for a *Texrope Drive* to break down. Even in the event of one or several belts failing, the machine can be operated with the remaining belts until it is convenient to make a replacement.

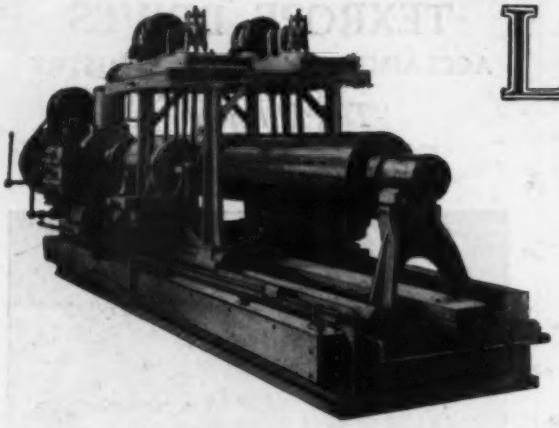
As a licensed manufacturer of *Genuine Texrope Drives*, we are equipped to render a complete engineering and supply service to all users of transmission equipment. Write us for a bulletin.

T. B. Wood's Sons Co.,

Power Transmission Machinery

Chambersburg, Pa.

LICENSED MANUFACTURER



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TYPE G-H ROLL GRINDERS

Direct connected, completely enclosed, geared driving head.

Automatic lubrication throughout including Vs and feed screw.

Complete protection of collector-wires, feed screw and all moving parts.

The automatic crowning device and the provision for leveling the bed, exclusive features of LOBDELL grinders, retained and improved

WRITE FOR CIRCULAR

LOBDELL CAR WHEEL COMPANY

Established 1836

WILMINGTON, DELAWARE

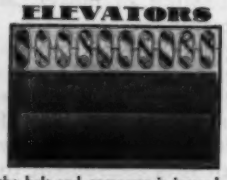
Tight Butt Joints

COMPRESSION PRINCIPLE

FAMED FOR DURABILITY

CONVEYORS

ELEVATORS



THE recessed plates embed in the belt and compress it instead of pulling against the bolt holes. This provides great surplus strength. It equalizes the pull throughout the plies. Keeps belt ends intact avoiding trouble. FLEXCO HD Belt Fasteners are in extensive use throughout many industries, giving long reliable service wherever tight butt joints are desired. Made in steel and in monel metal. Sold by jobbers and belting houses in 5 sizes. Recommendations supplied gladly

FLEXIBLE STEEL LACING COMPANY

4675 Lexington Street Chicago, Illinois

In England at 135 Finsbury Pavement, London, E. C. 2

FLEXCO

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Belt Fasteners

RADIAL BRICK

CHIMNEYS

Designed and Built

OLD CHIMNEYS

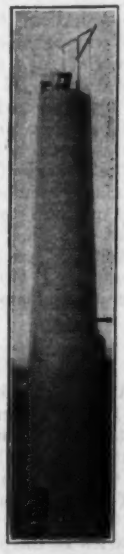
Inspected and repaired while in operation—

also guaranteed.

Among our customers are some of the best known Railroads, Waterworks; and Coke, Steel, Machinery, Paper, Soap, Chemical and Glass Manufacturers.

Write for full information

A Repair Job



New Erection

The NORTHWESTERN CHIMNEY CONSTRUCTION CO.

FIDELITY BLDG. Cleveland, O.